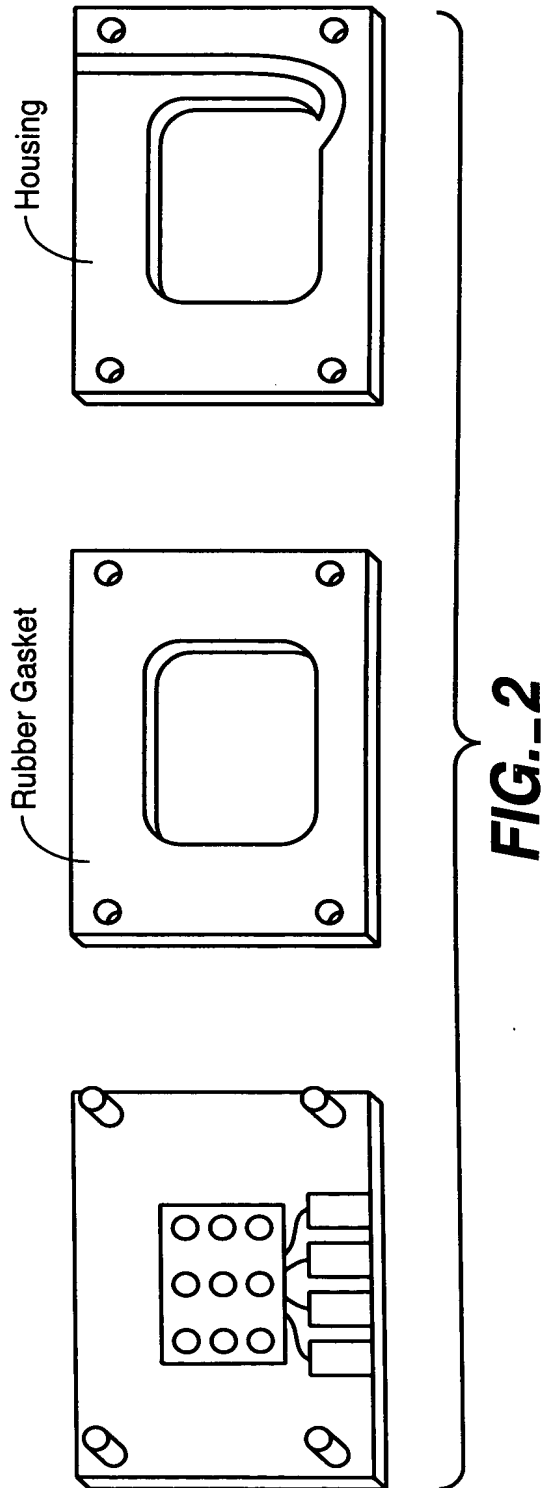


FIG. 1



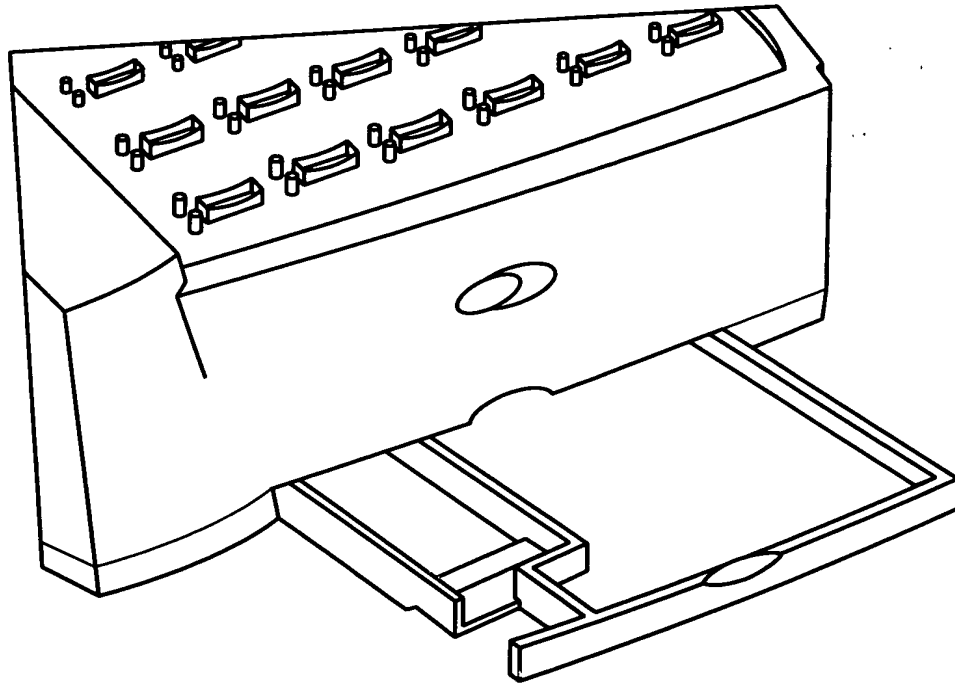


FIG. 3A

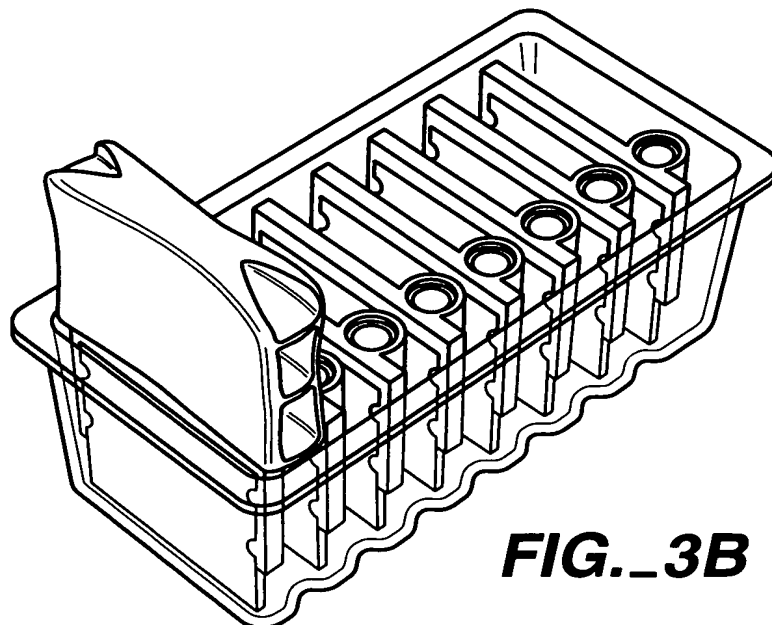


FIG. 3B

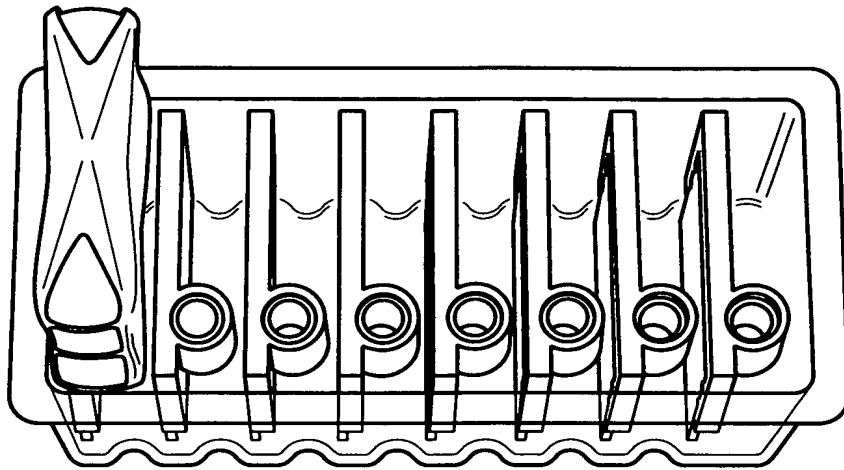


FIG. 3C

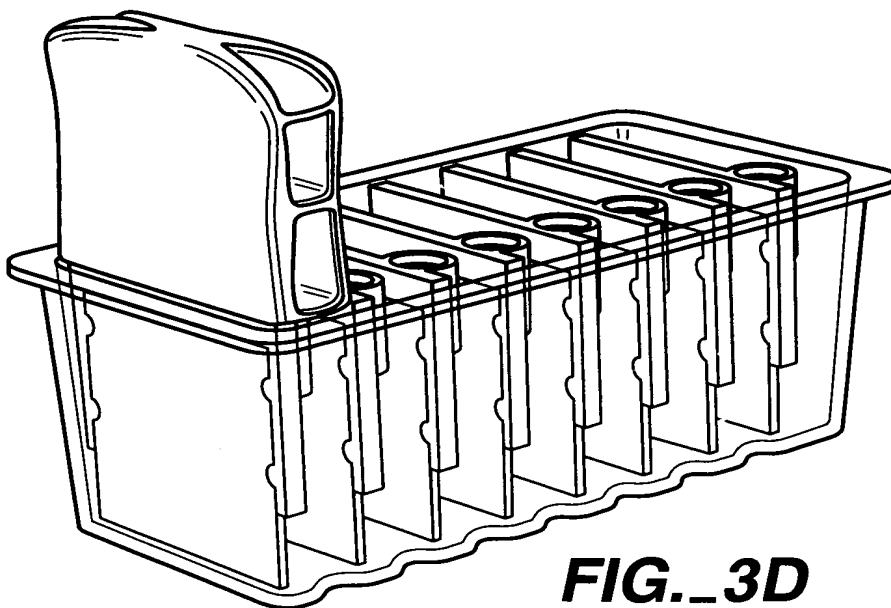


FIG. 3D

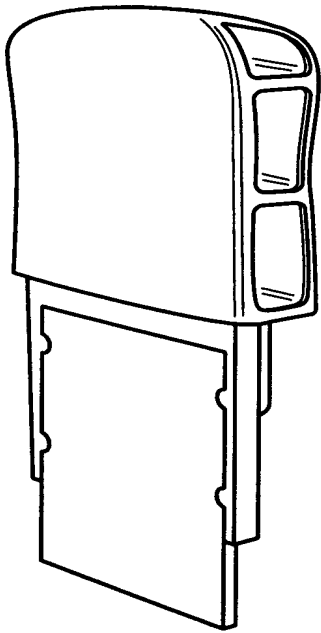


FIG. 3E

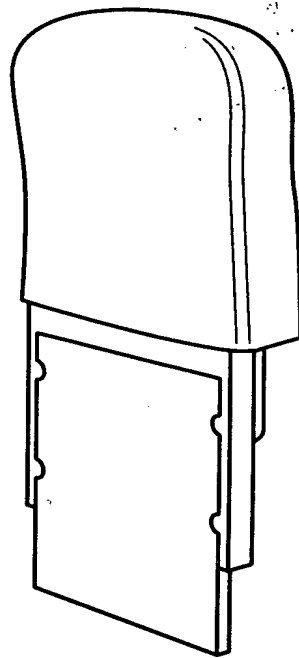


FIG. 3F

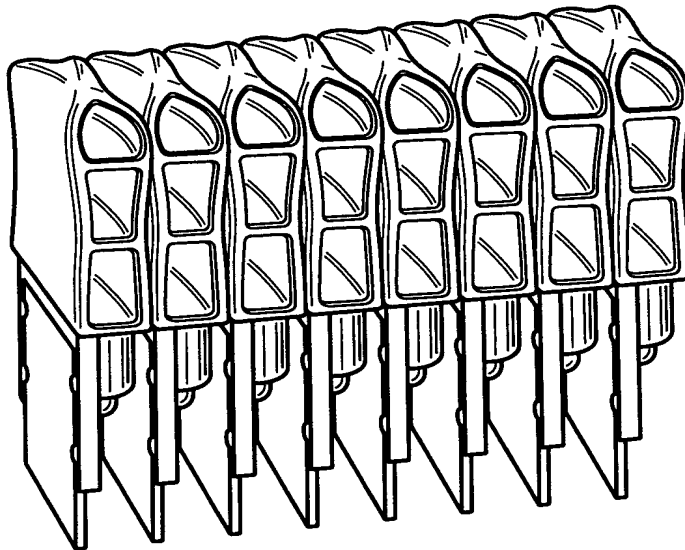


FIG. 3G

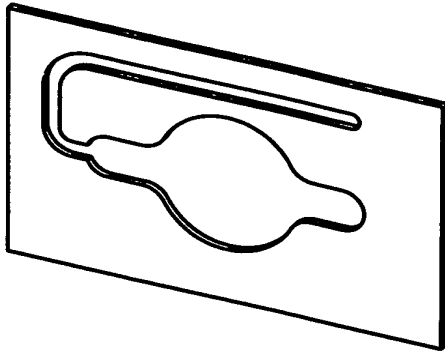


FIG._4A

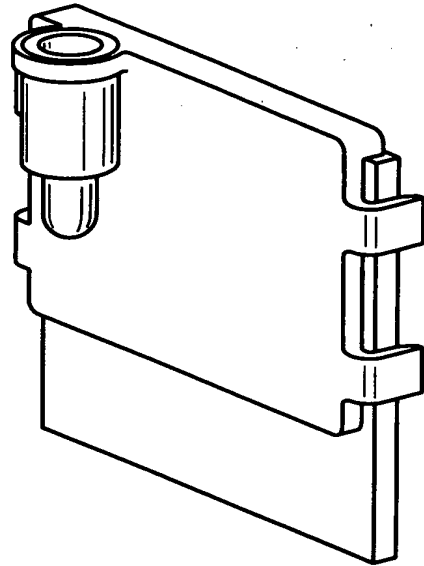


FIG._4B

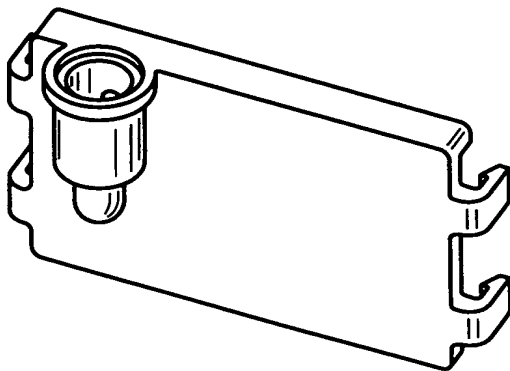


FIG._4C

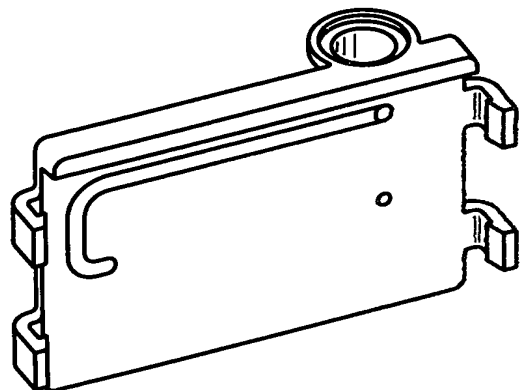


FIG._4D

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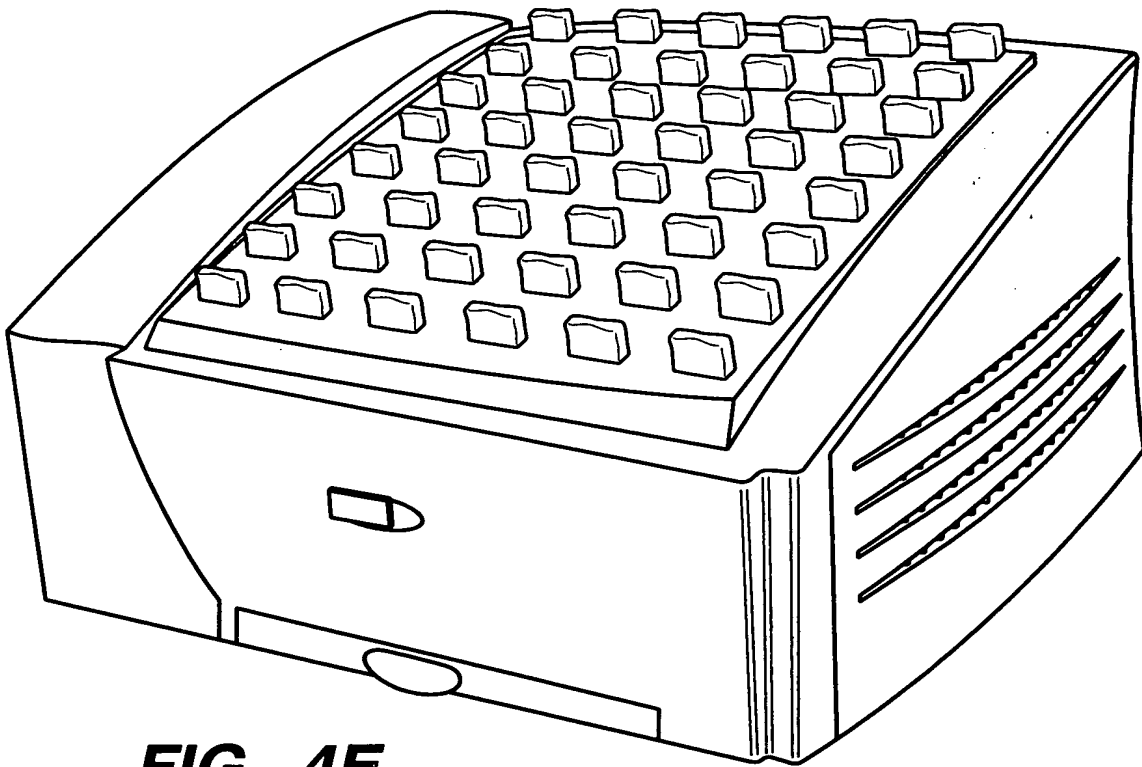


FIG. 4E

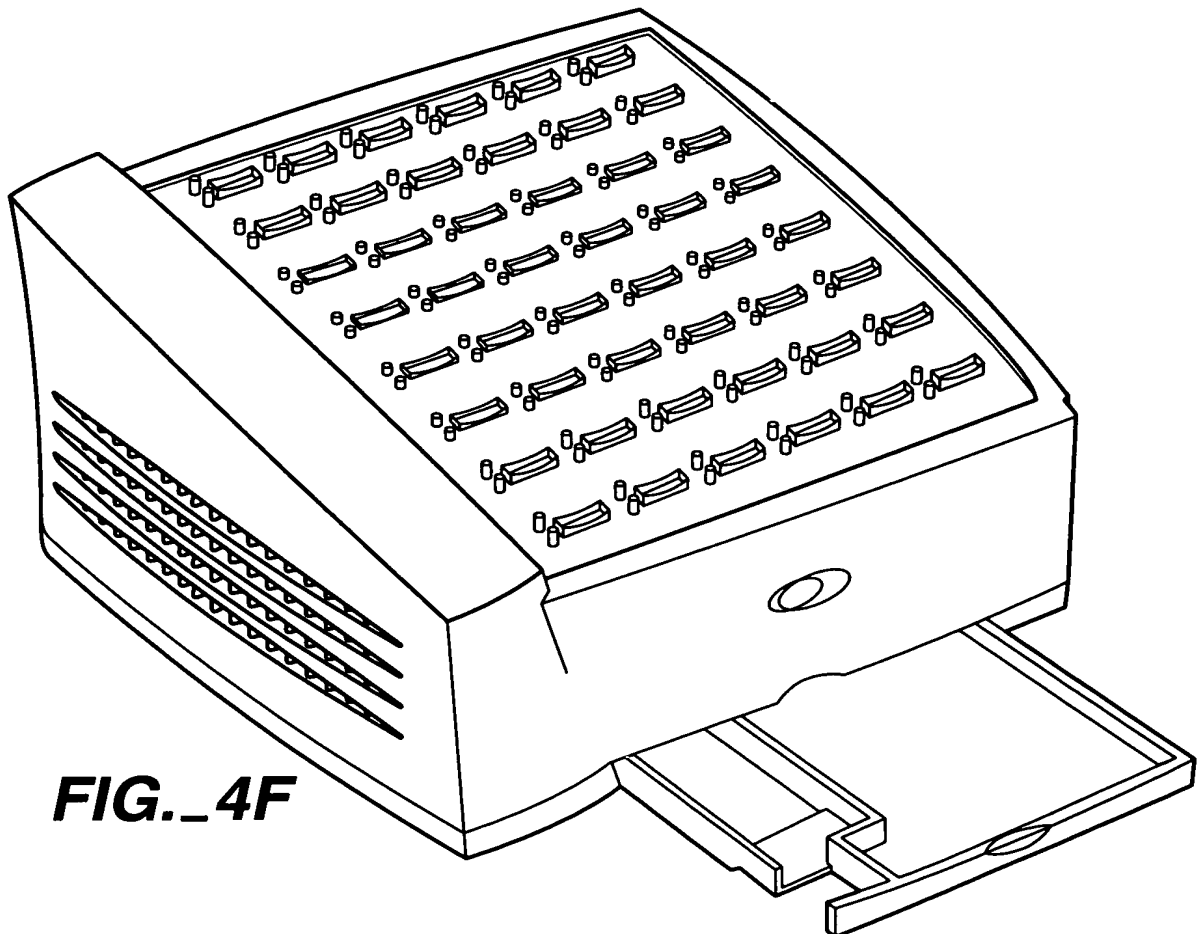
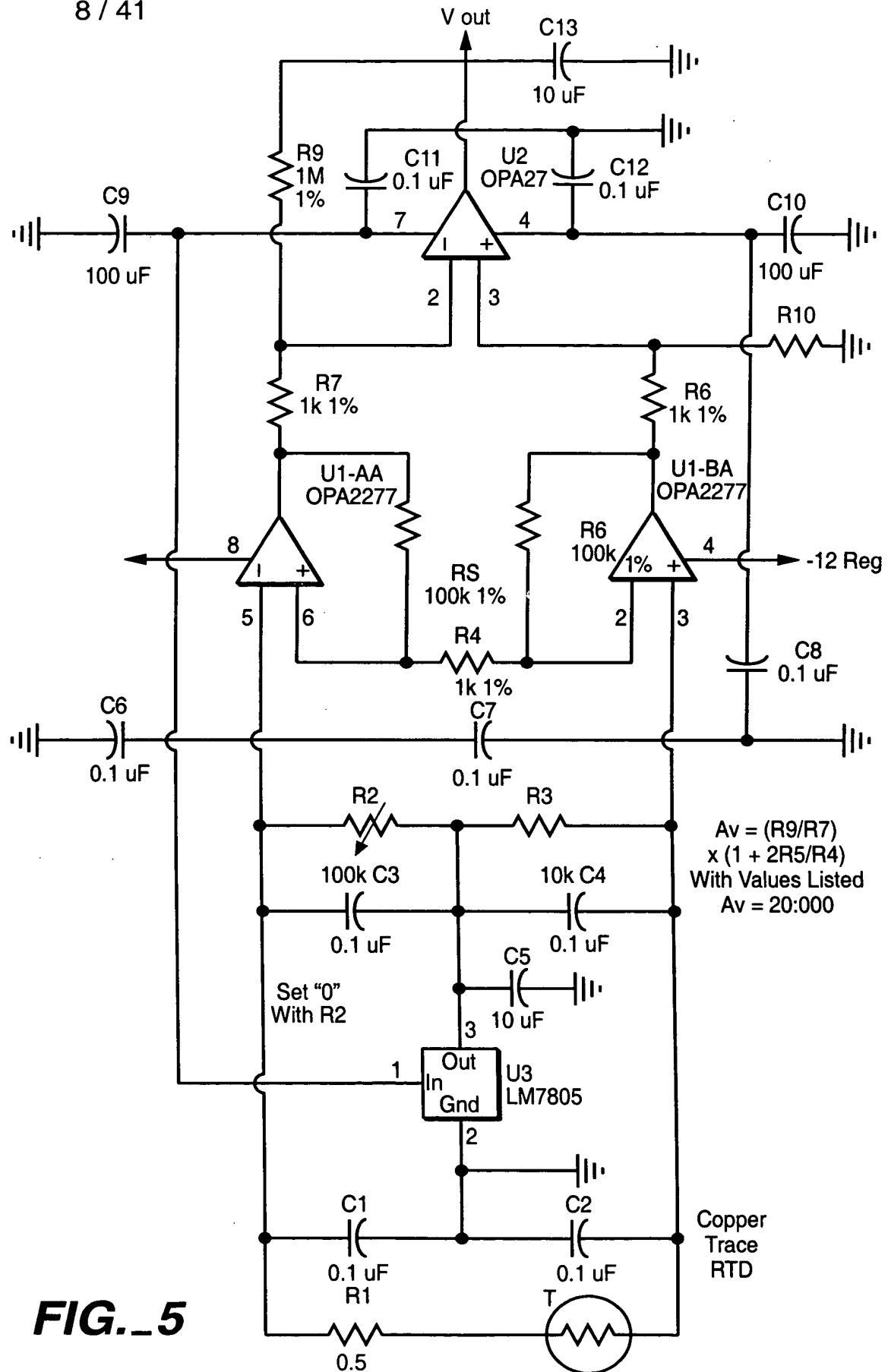
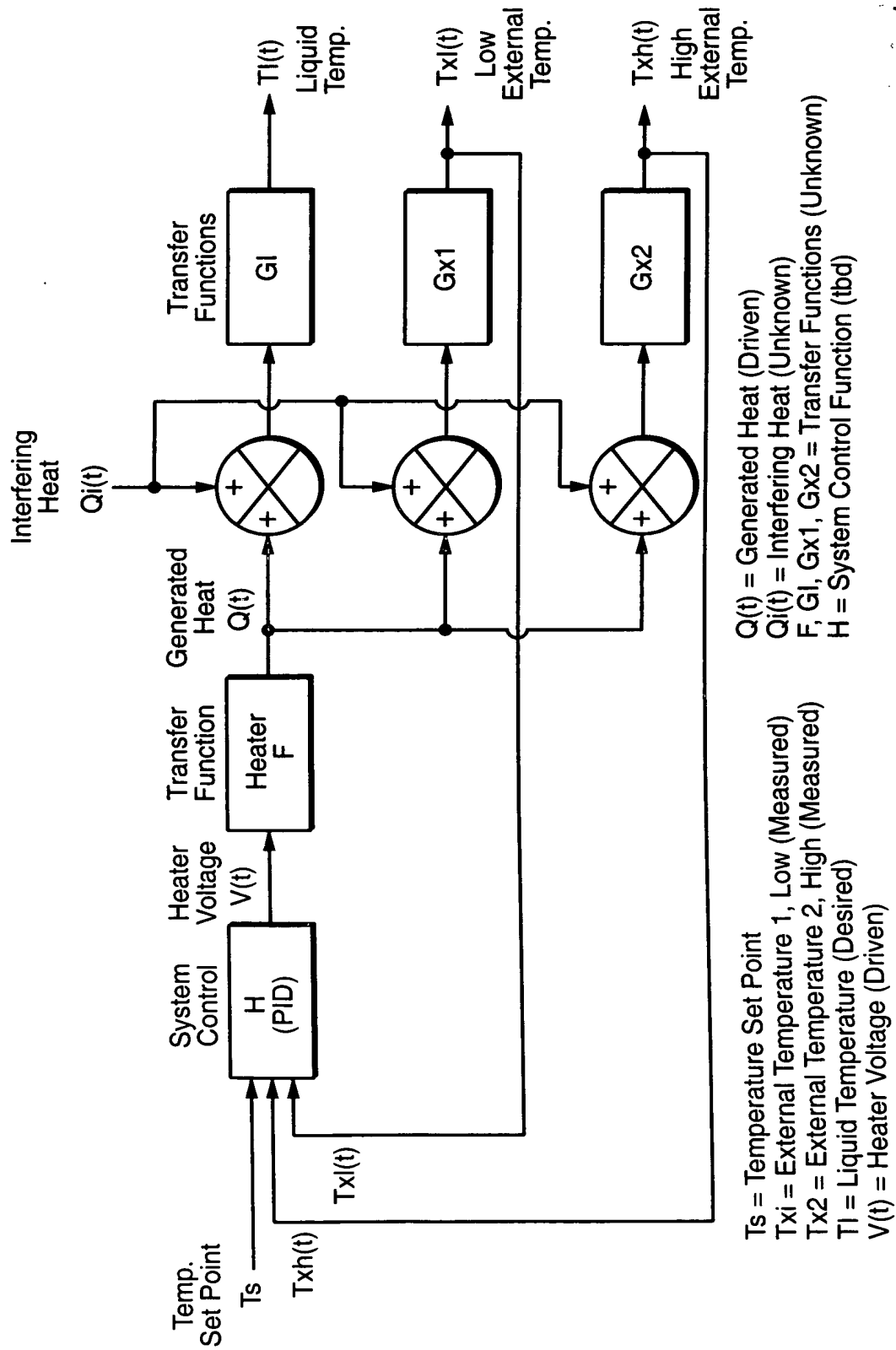


FIG. 4F

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**FIG. 5**

**FIG. 6**

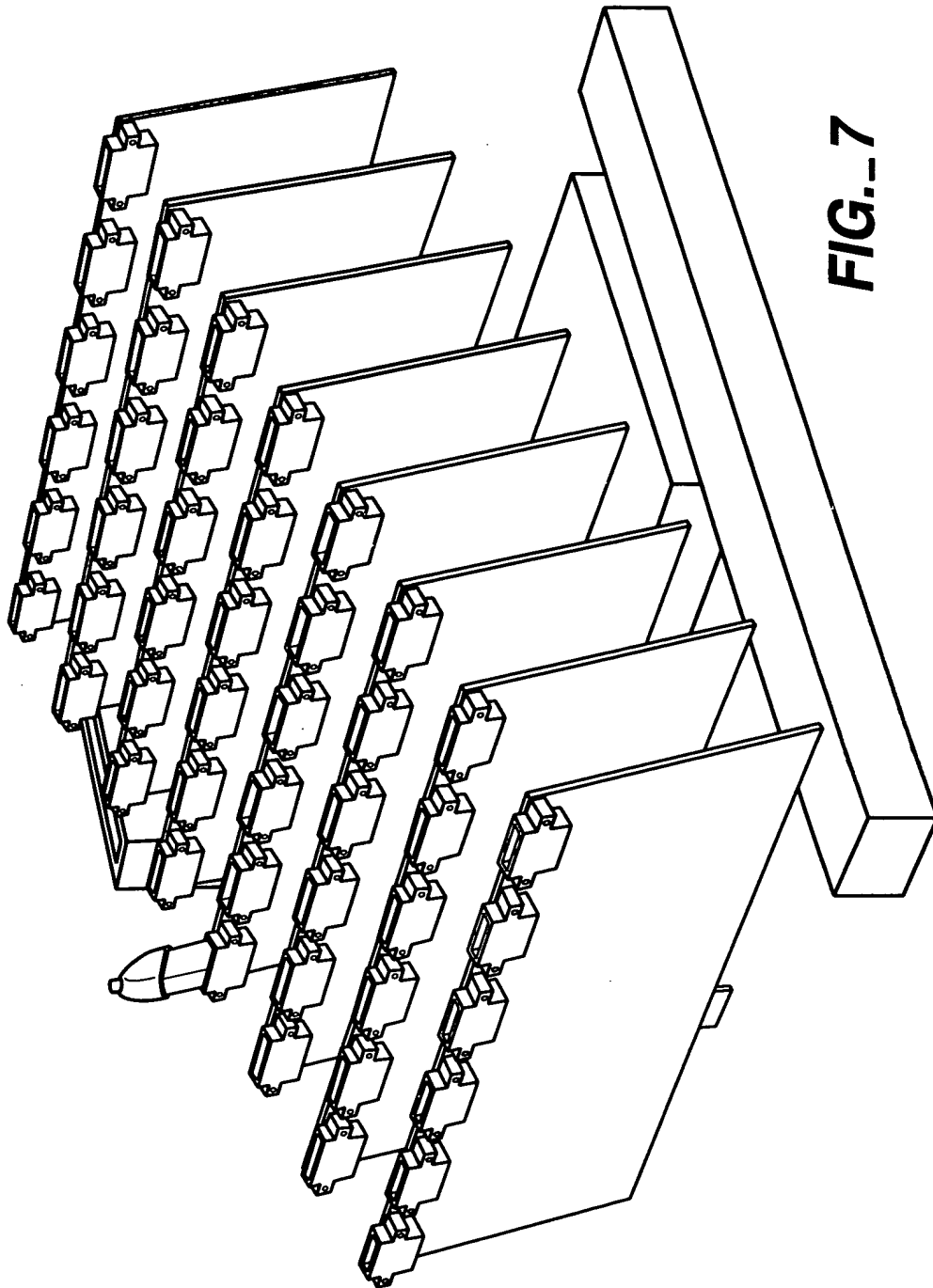
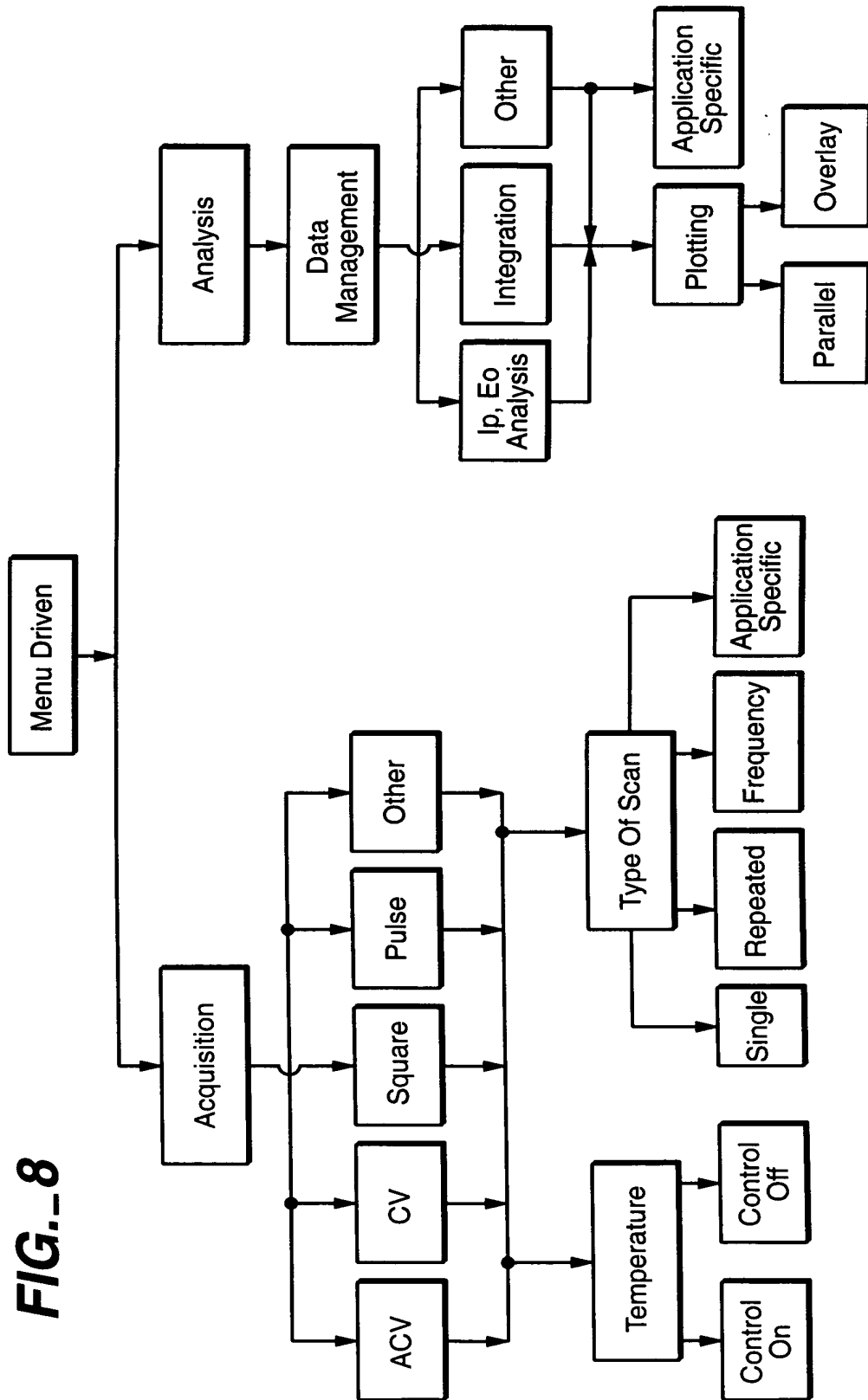


FIG. 7



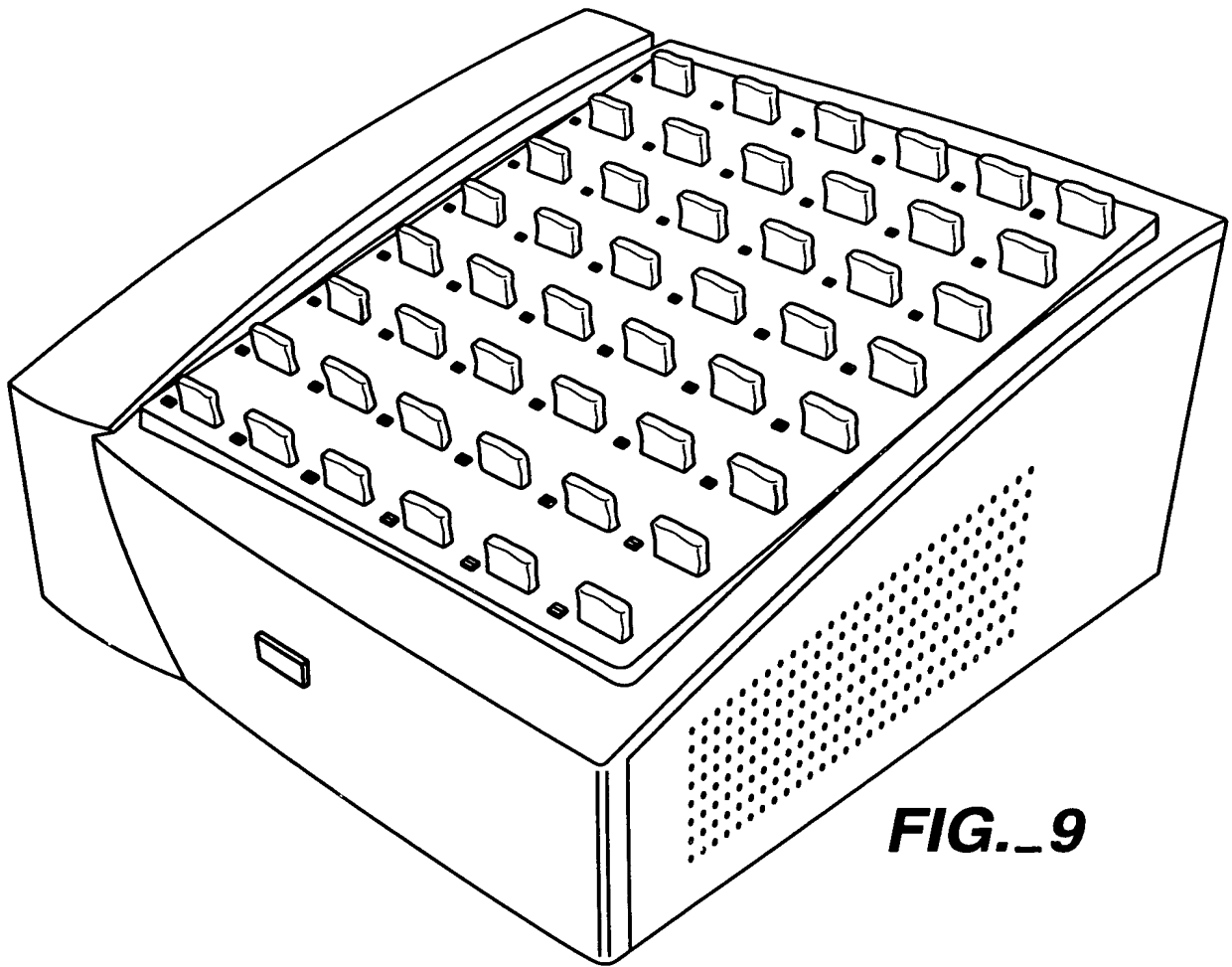


FIG._9

FIG._10A

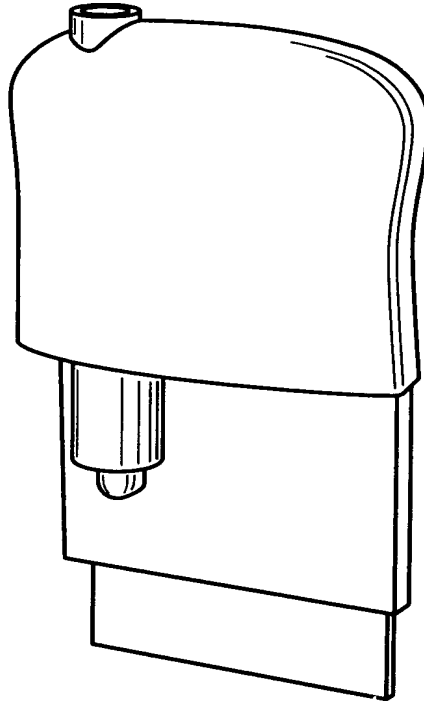
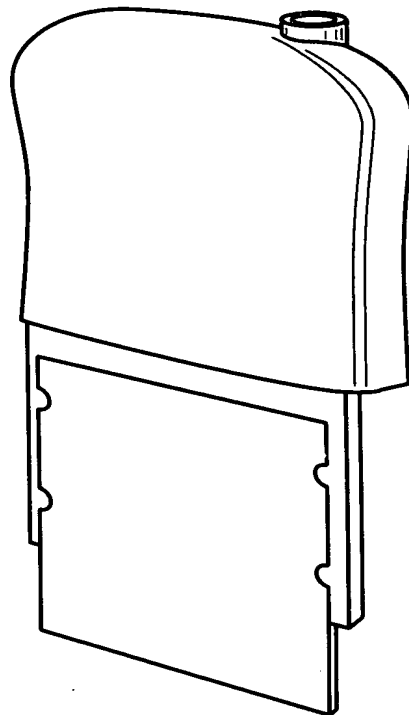
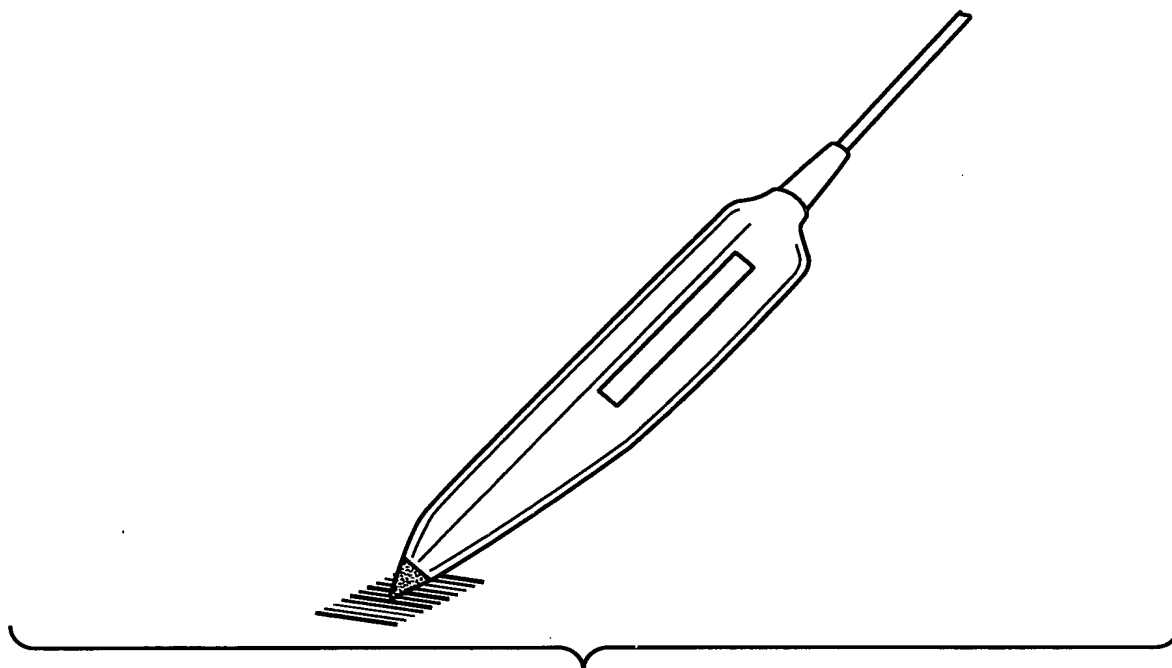


FIG._10B



- Bar coded “reference” sheet, stored in tray under unit, with bar coded protocols, bar coded well and slot id’s, bar coded commands (e.g. “cancel”, “done”, etc.)
- Standard bar code wand (preferably with built-in decoder), housed in the tray (hence hidden when not in use)
- Serial (RS-232/485) interface (preferred), or “keyboard wedge”
- Multi-code support (Code 39, Code 128, etc.)
- Bar code on chip carrier (1 code per “8 pack”), identifying test, batch, etc.
 - Peel off labels, with same code as on carrier, with each “8 pack”

**FIG._11**

- Bar code usage scenario
 - User fills "8-pack" (all 8, or partially) from a 96 well plate, or from individual sample containers (PCR tubes, vacutainers, etc.)
 - Pull out tray (with bar code reference sheet) and grab wand
 - Scan "start" code
 - Scan protocol code from sheet (will remain in effect until "done" is scanned)
 - Scan chip code from carrier (will remain in effect until "done" is scanned)
 - For each cartridge, user will
 - insert the cartridge in an open slot. Unit senses new chip automatically
 - scan the sample ID by either
 - scanning 96 well plate bar code from plate and well code from sheet
 - or scanning unique sample ID from container
 - or scanning "no ID" from reference sheet
 - Scan "done" code. The protocol can' now be started on these cartridges



FIG._12

- Bar code concept benefits
 - No keyboard entry (all-routine setup can be entered via bar coding)
 - All routine entries accomplished while in front of unit (no going back & forth between PC & Hydra)
 - All bar code entries done from small, flat surface in front of unit
 - No need to label each chip or each slot (which would compromise appearance)
 - Uses small unobtrusive bar code wand, hidden when not in use
 - Is flexible with respect to sample container (tube, 96 well plate, etc.), chip usage (by row of 8, or by individual chip), and lab bar coding method



FIG._13

FIG._14A

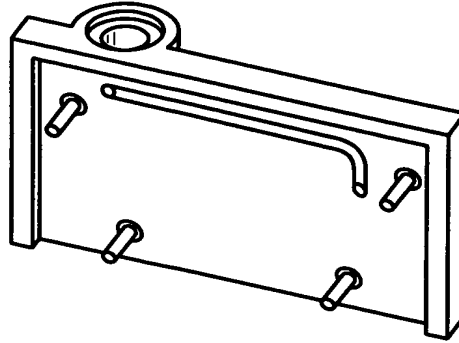


FIG._14B

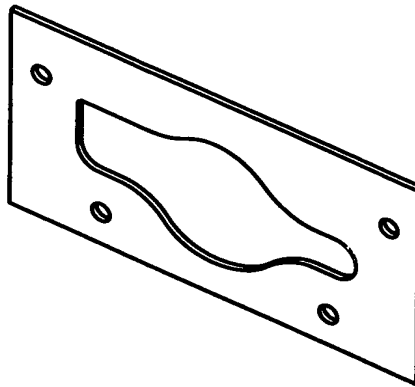


FIG._14C

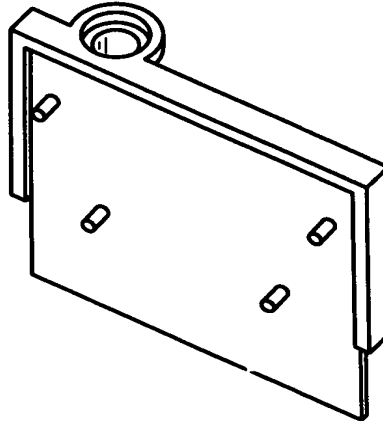
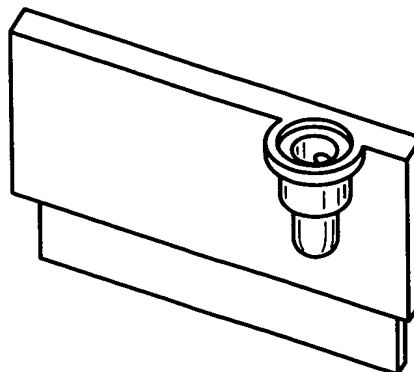


FIG._14D



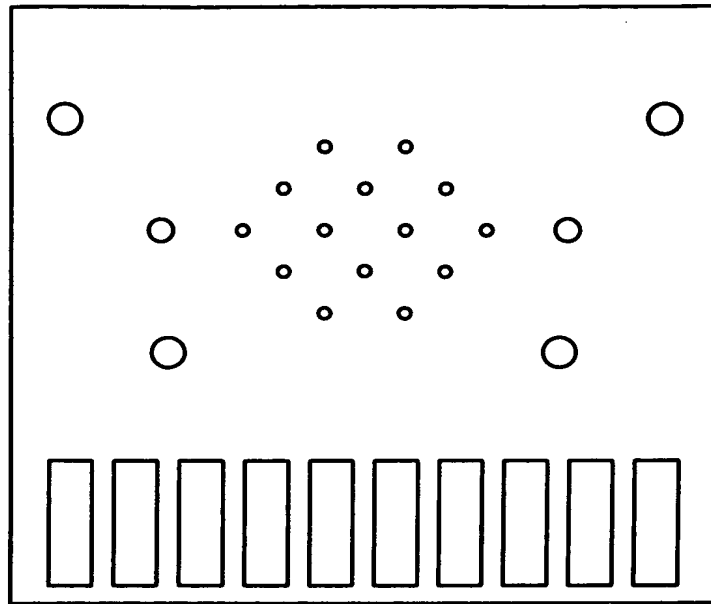


FIG. 14E

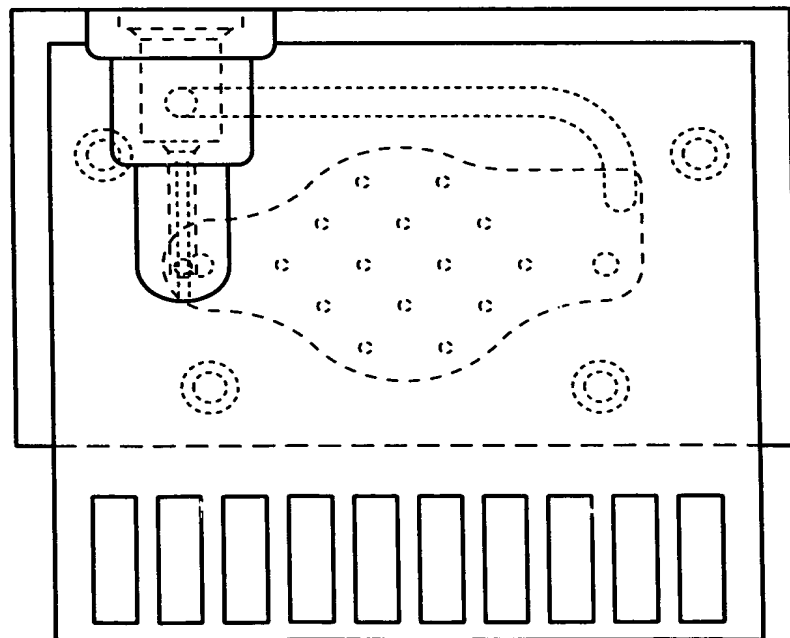


FIG. 14F

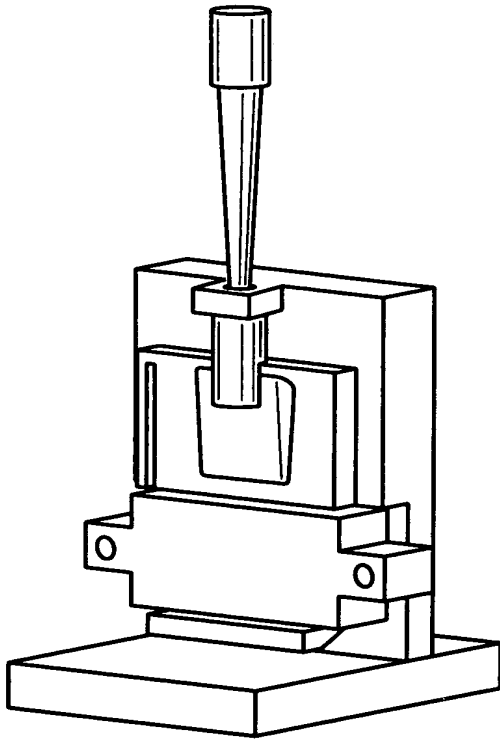


FIG. 15A

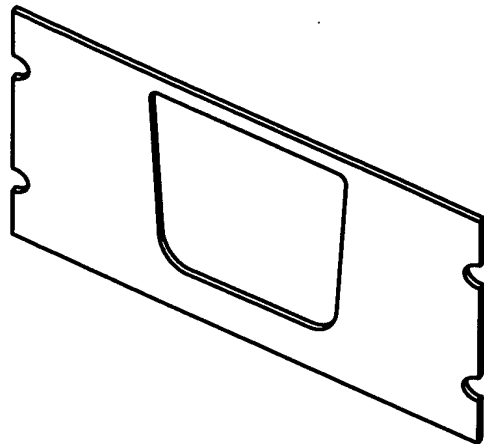


FIG. 15B

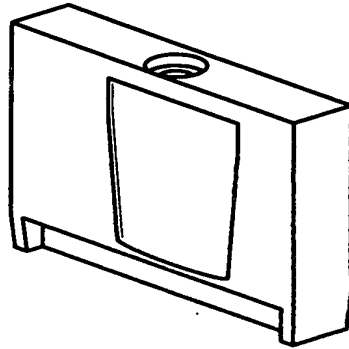


FIG. 15C

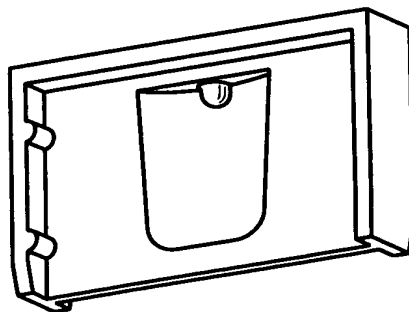


FIG. 15D

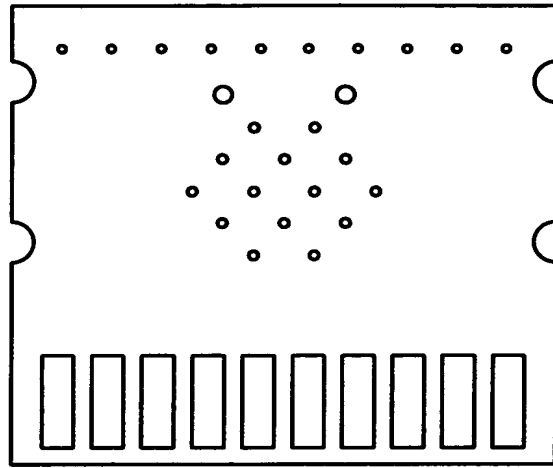


FIG. 15E

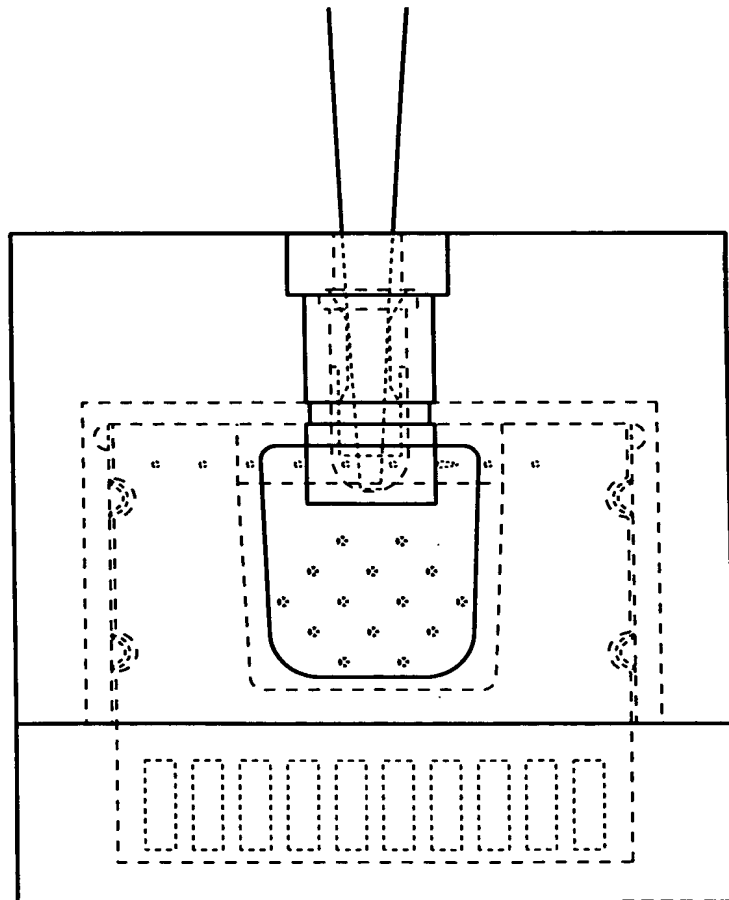
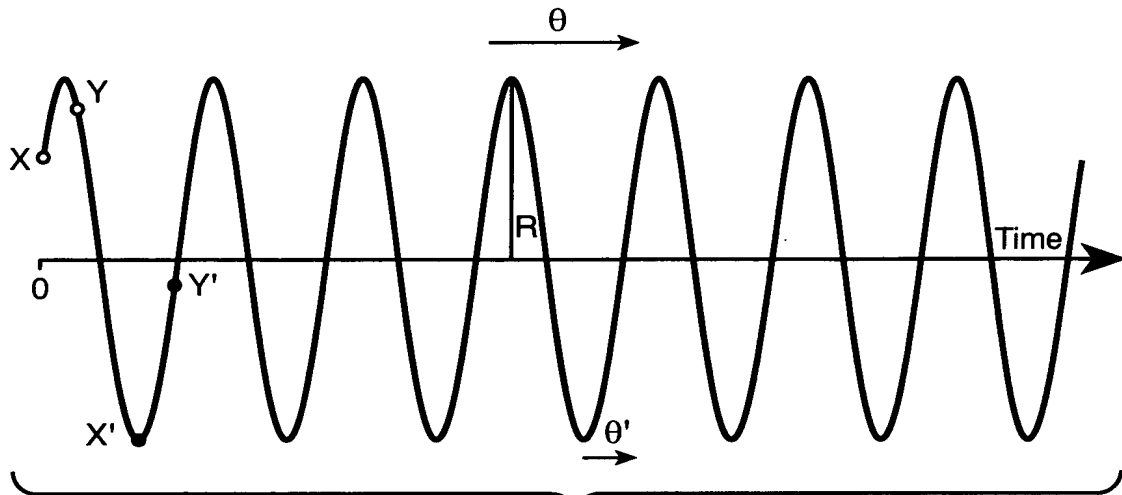
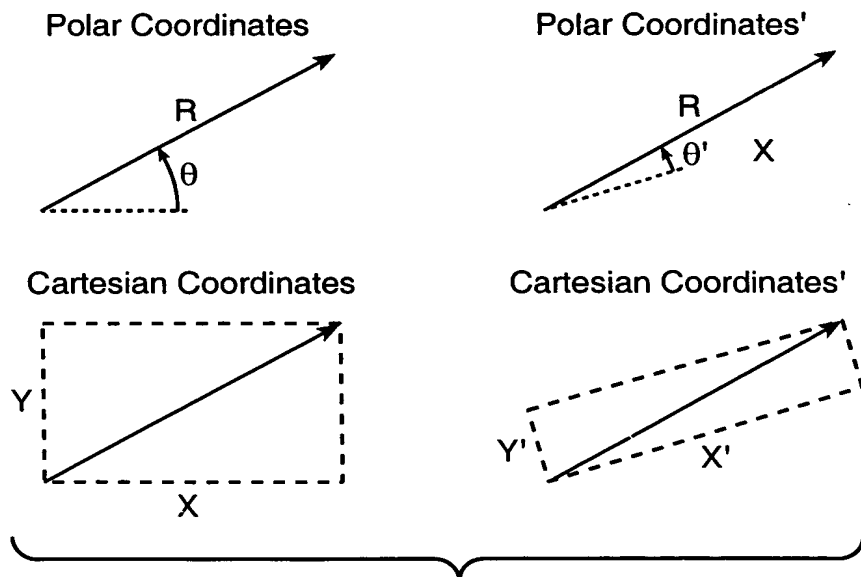
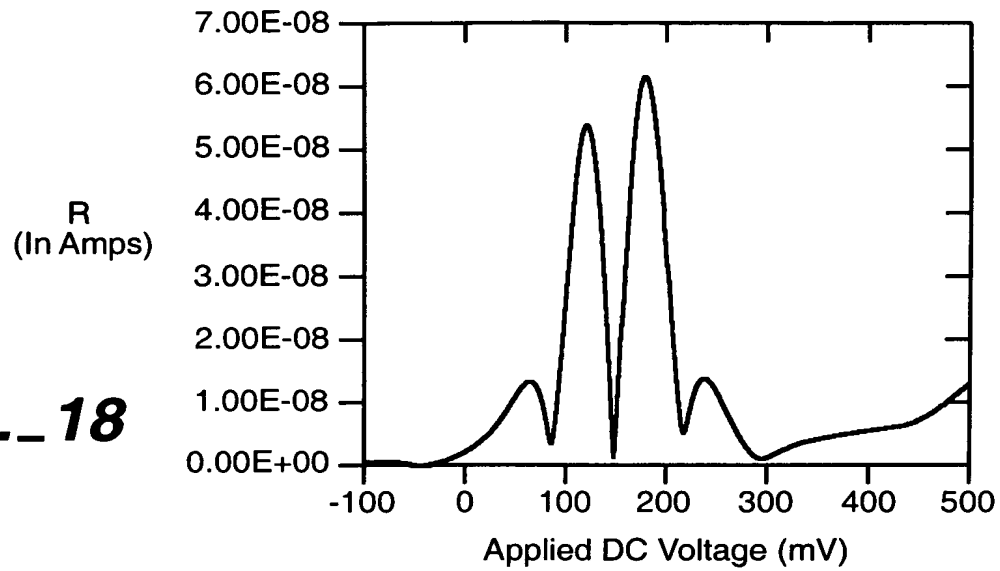
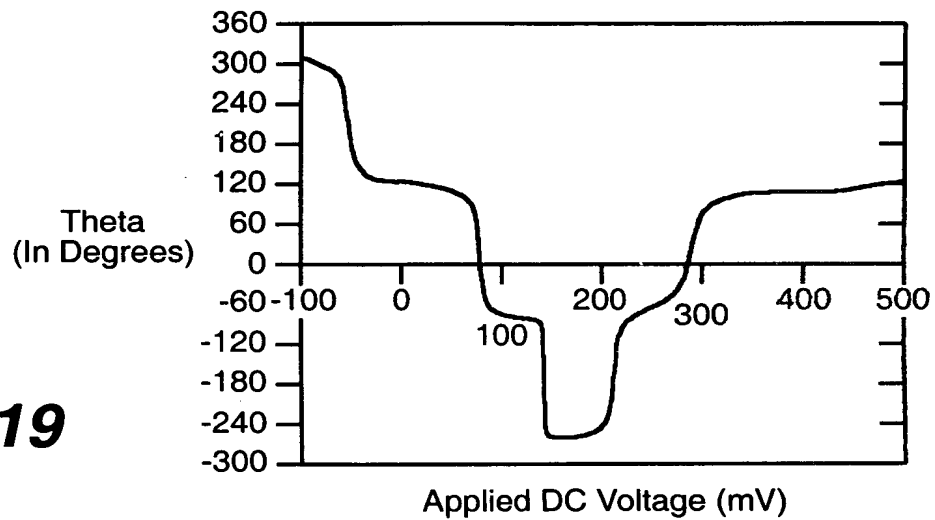
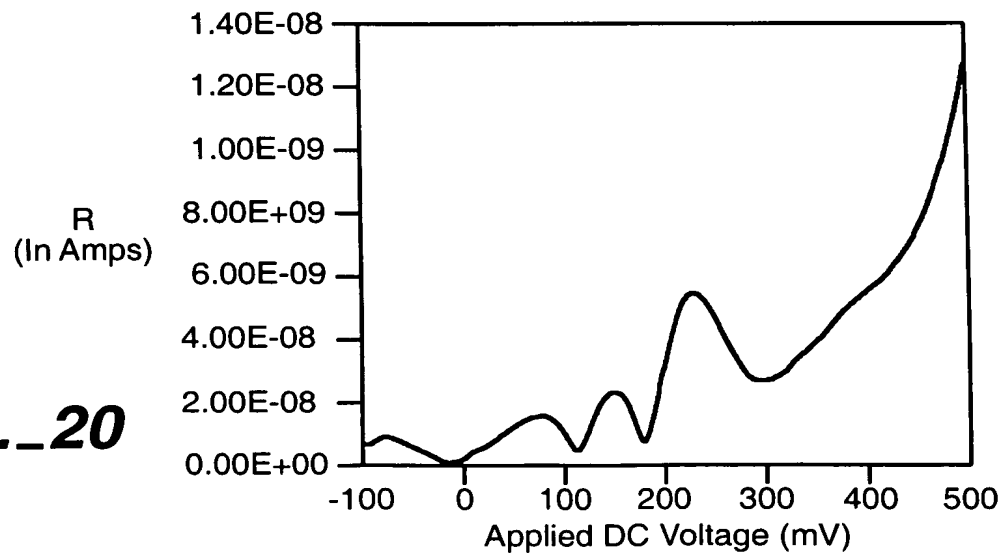


FIG. 15F

A Sine Wave And Its Corresponding Vector Notation

**FIG._16****FIG._17**

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FIG._18**FIG._19****FIG._20**

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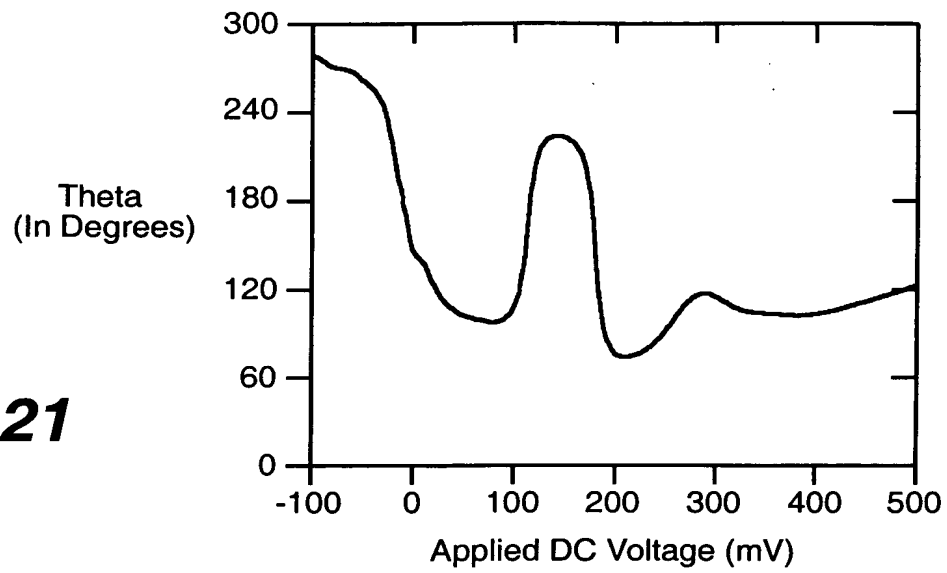
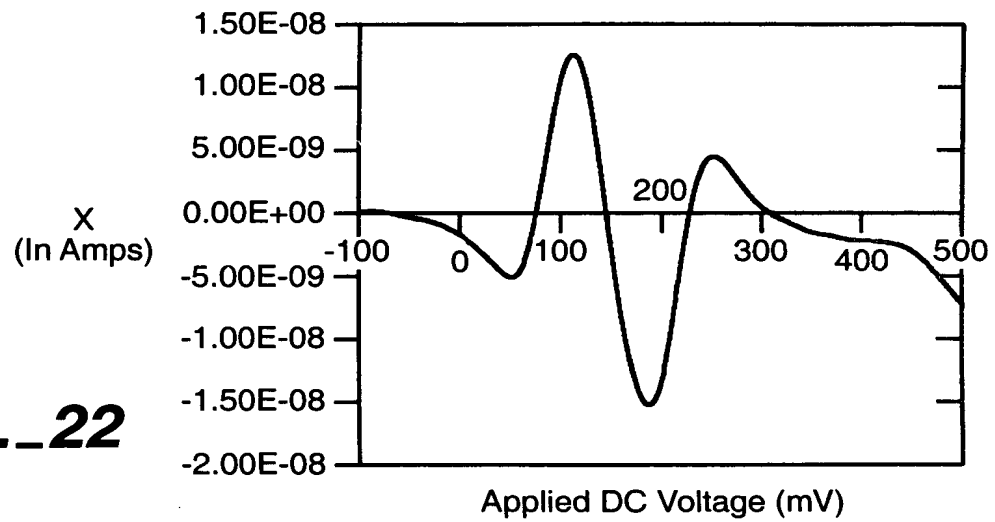
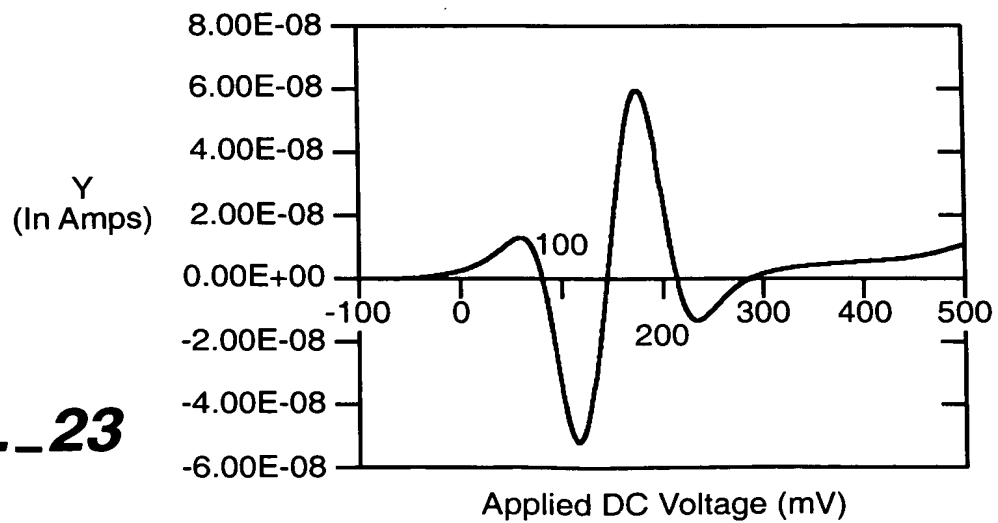
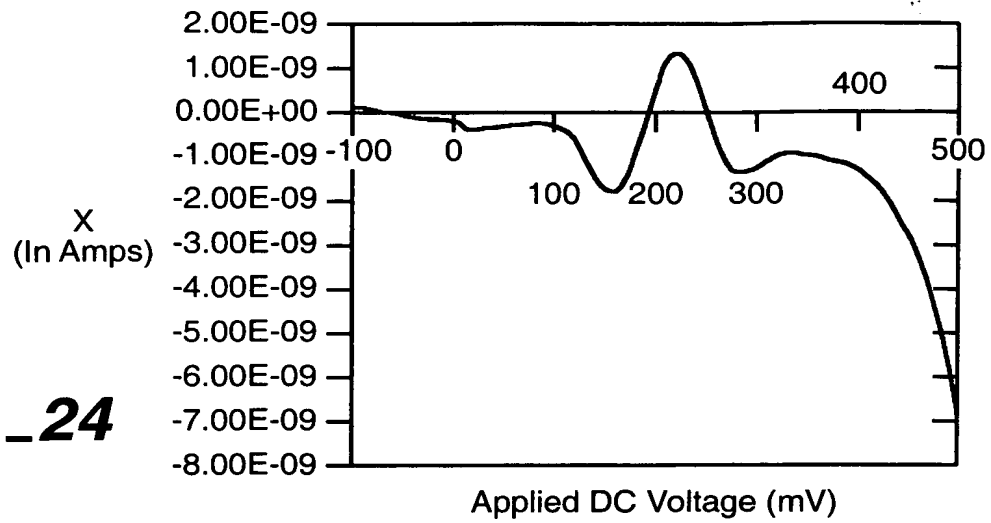
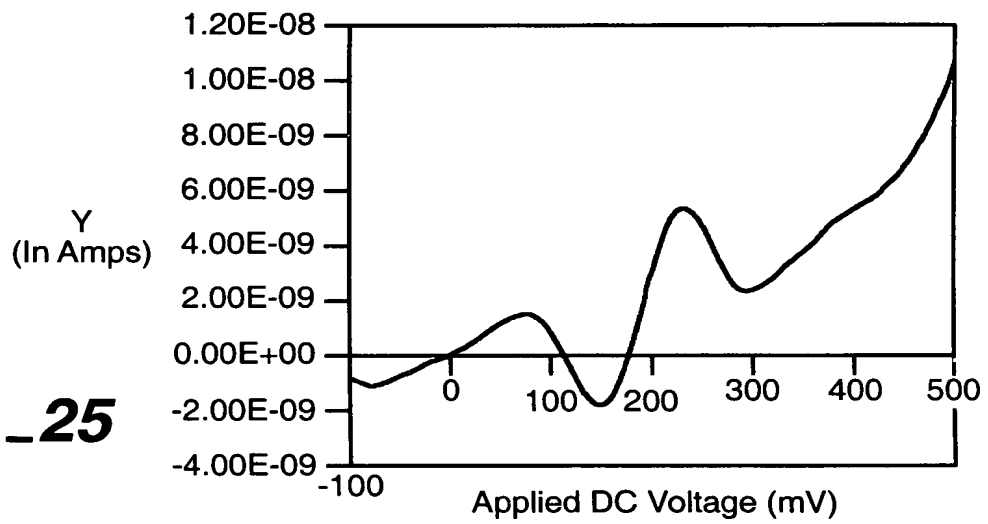
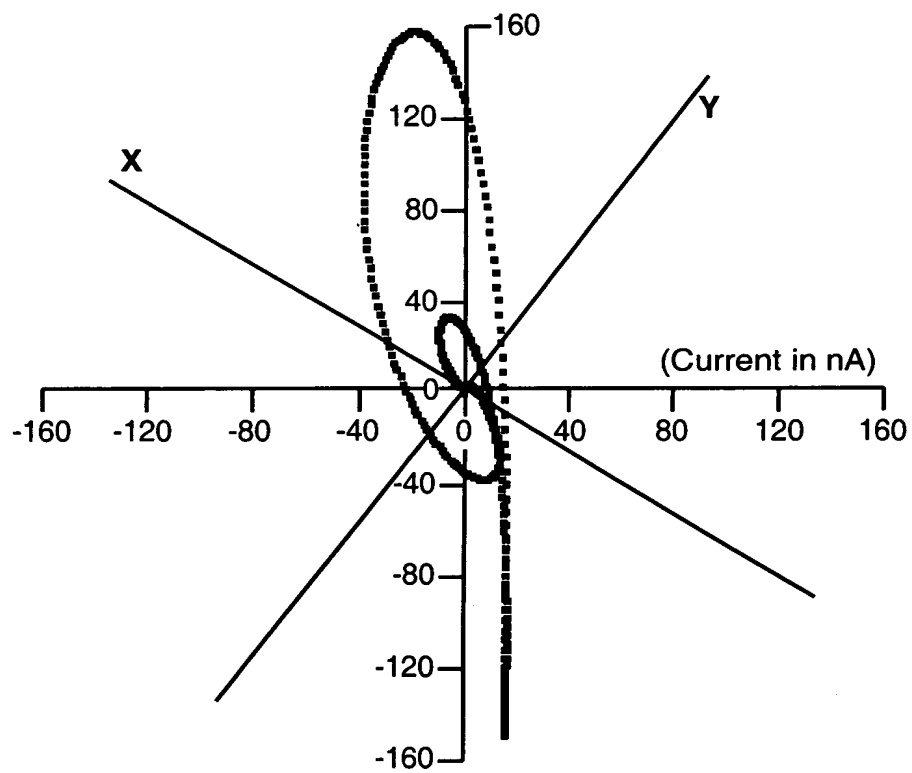
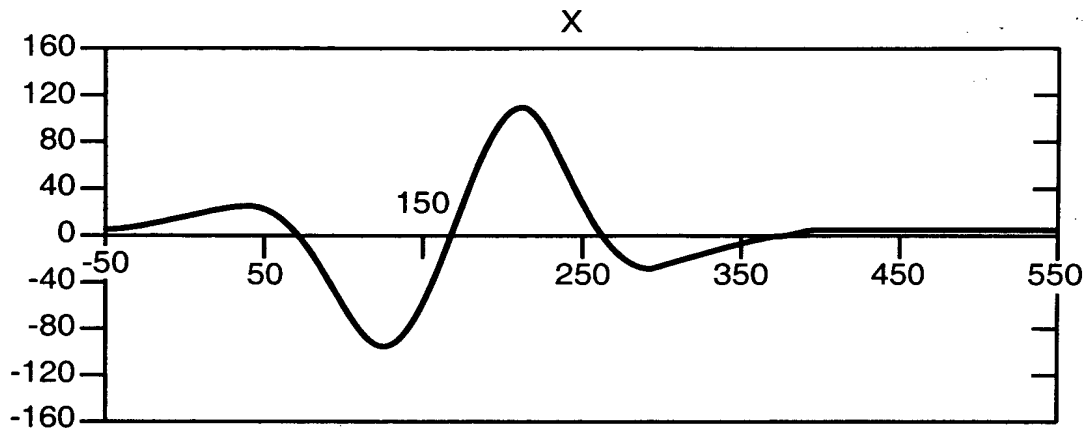
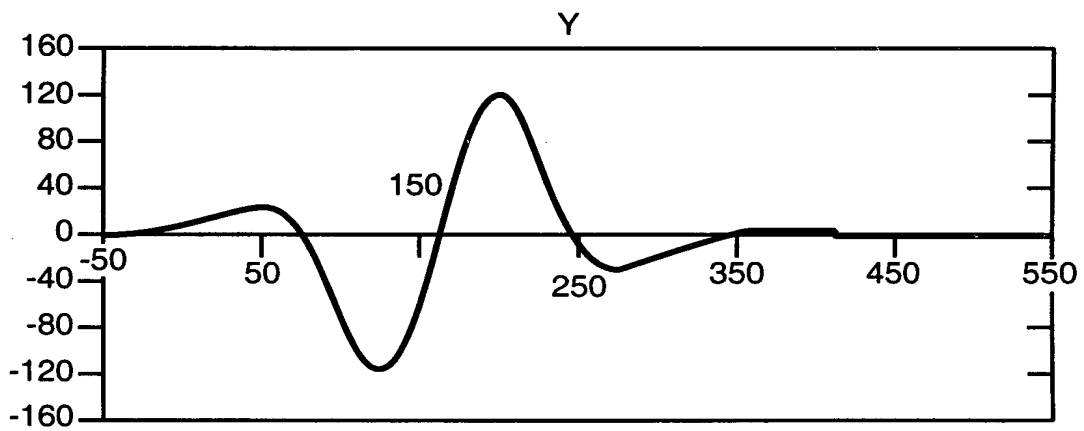
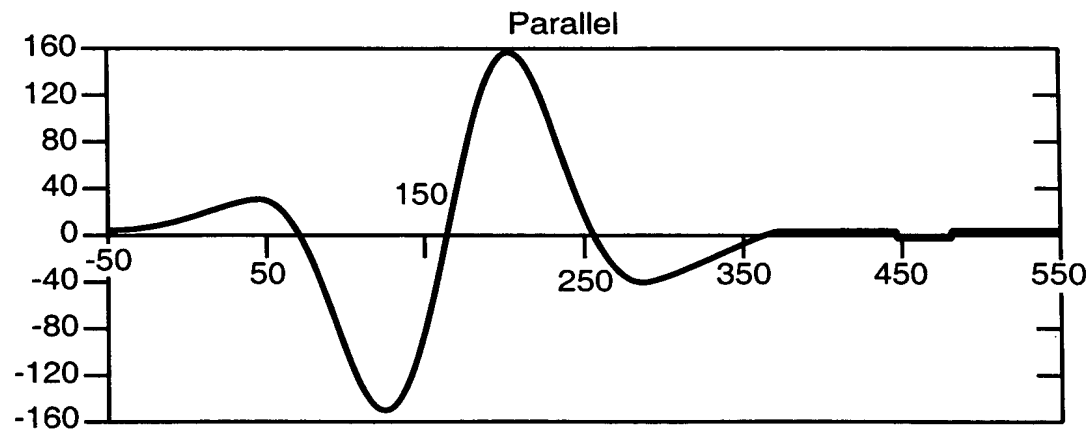
FIG._21**FIG._22****FIG._23**

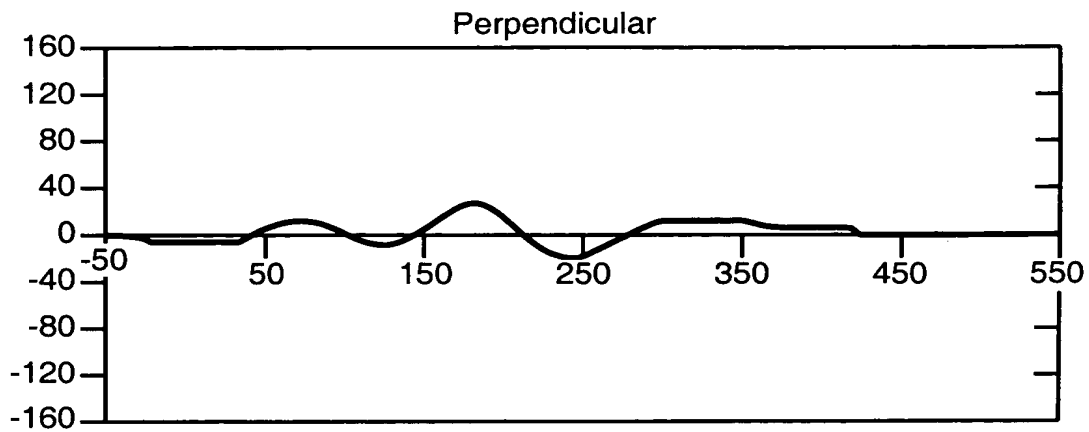
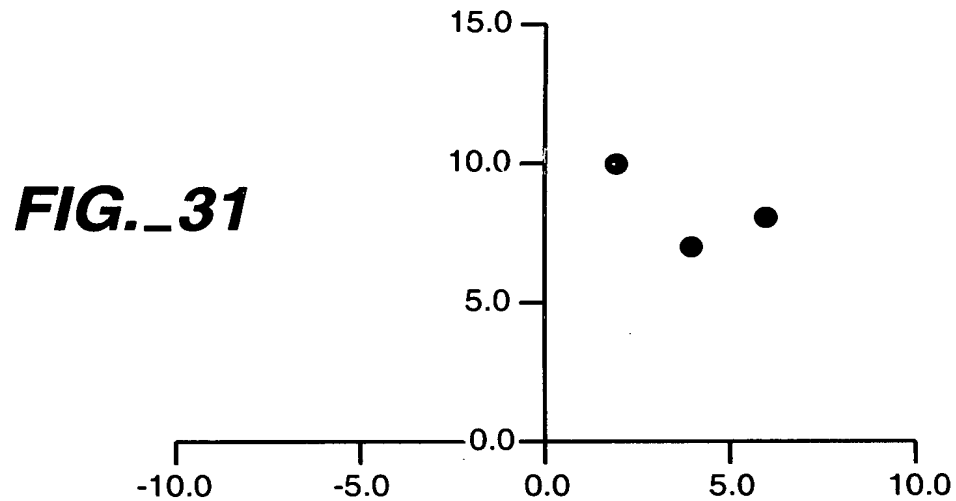
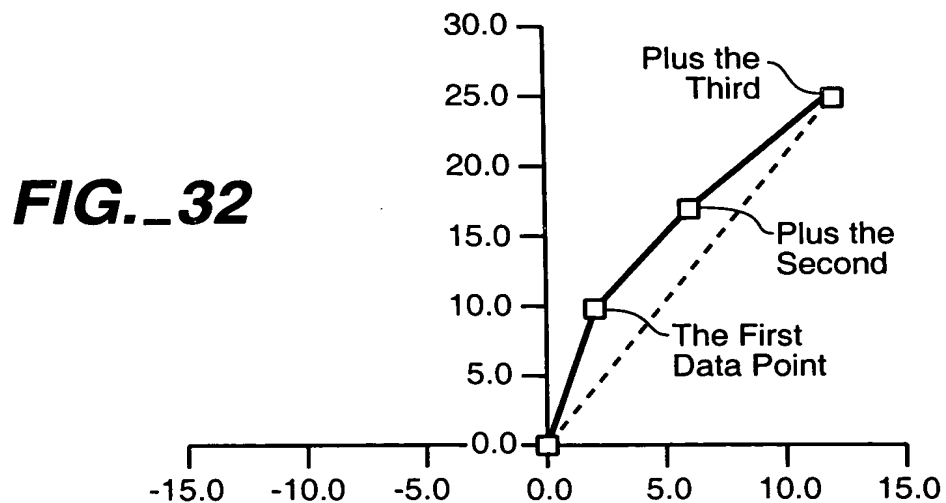
FIG._24**FIG._25**

**FIG._26**

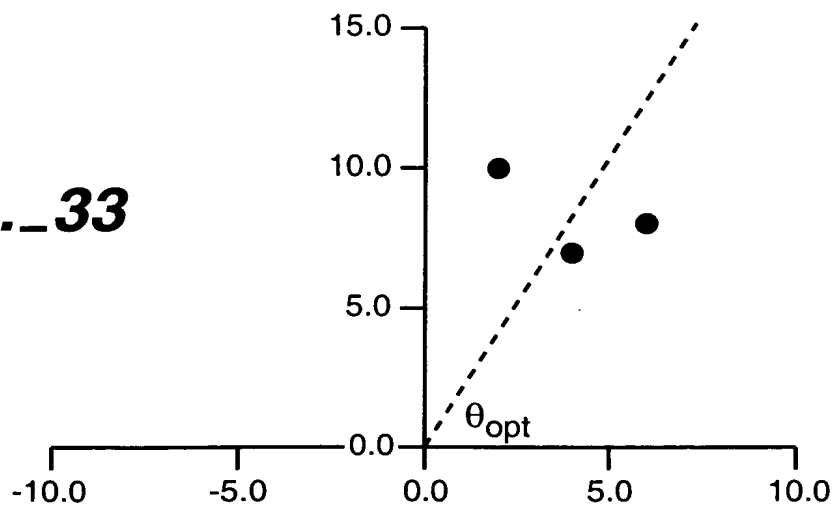
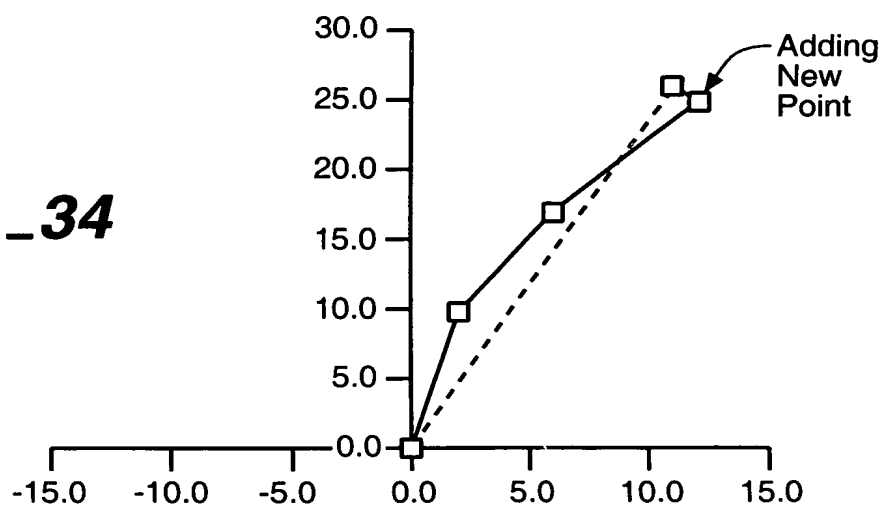
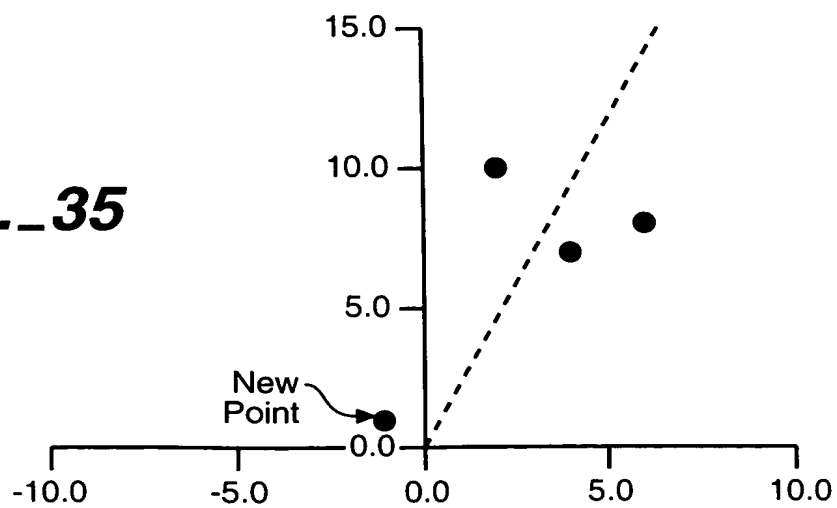
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**FIG._27****FIG._28****FIG._29**

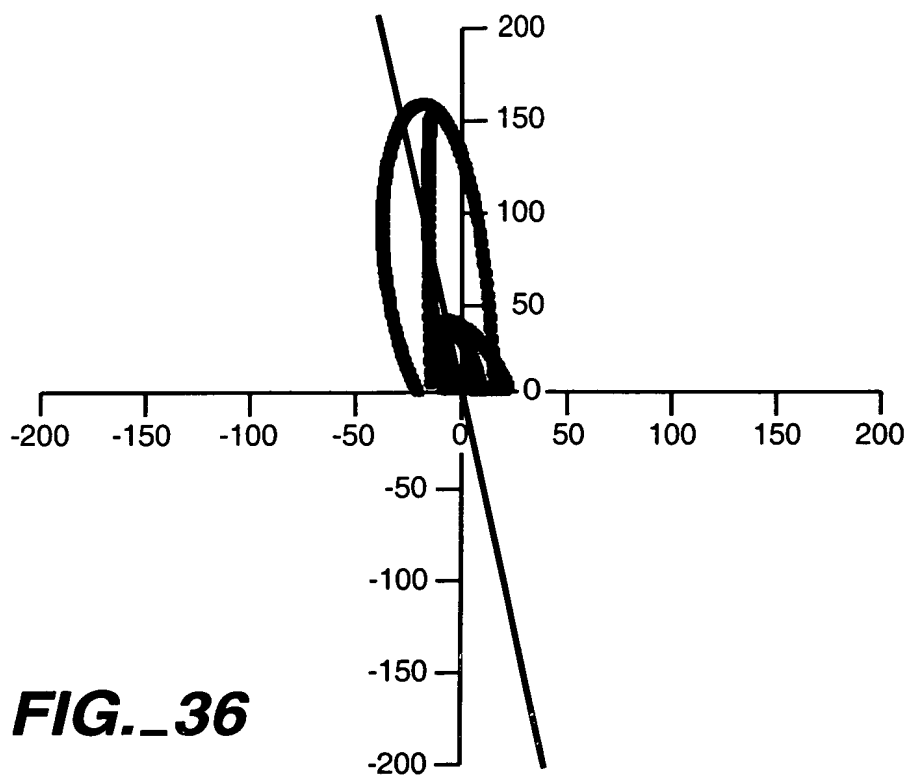
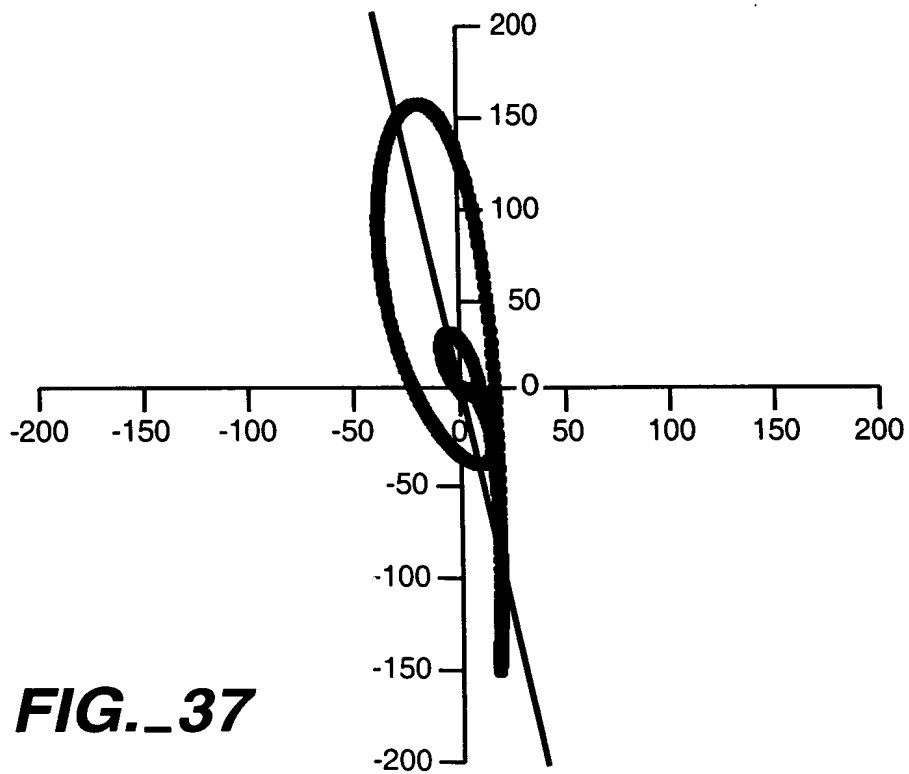
26 / 41

**FIG._30****FIG._31****FIG._32**

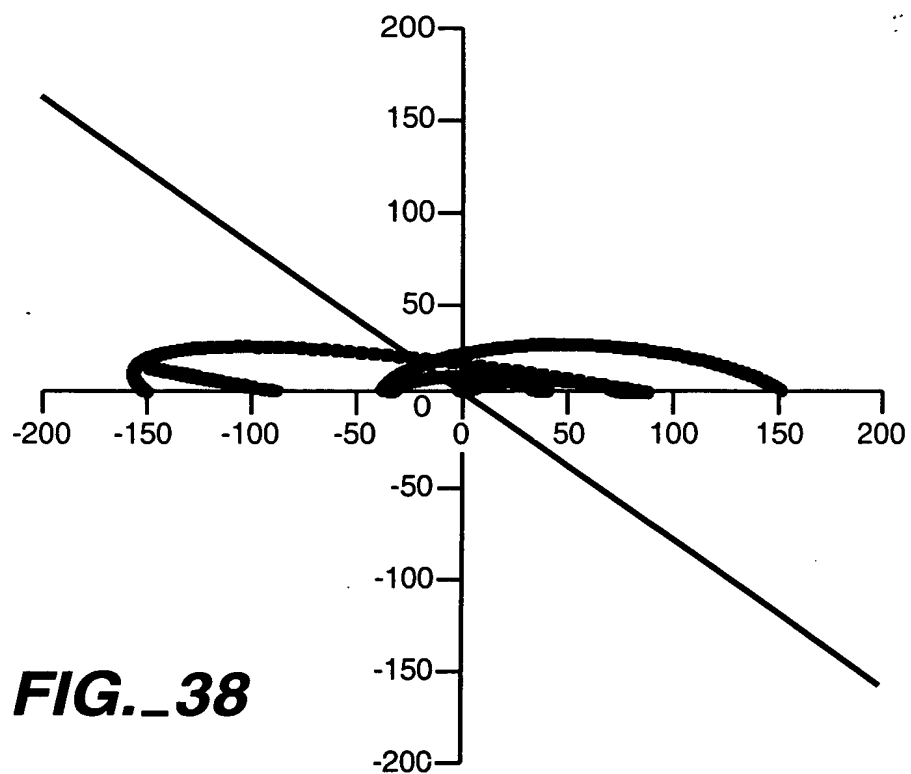
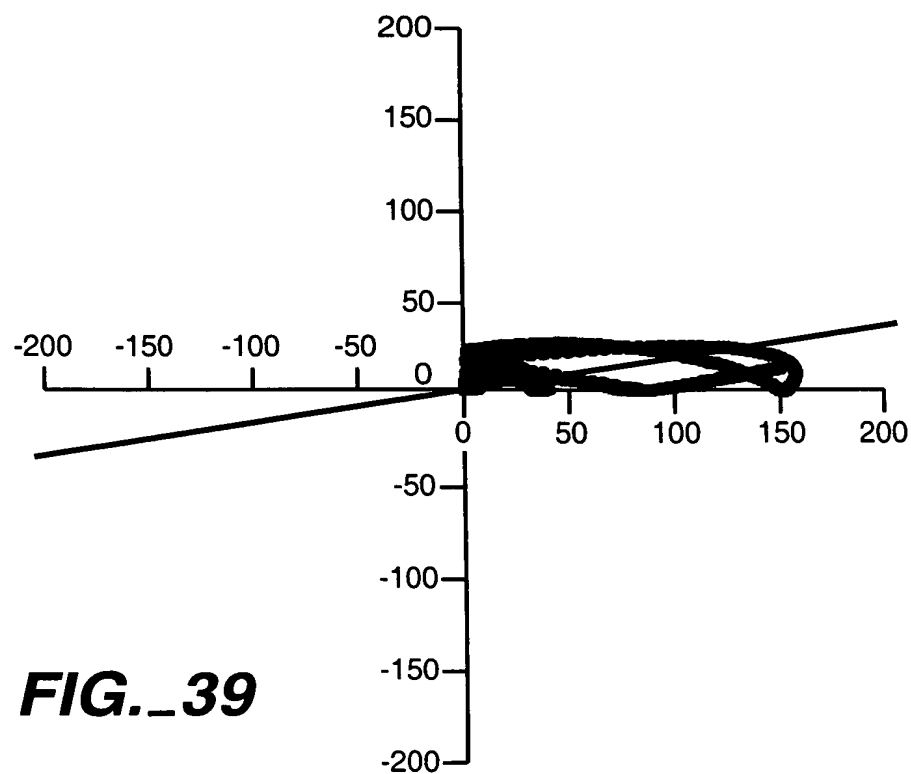
27 / 41

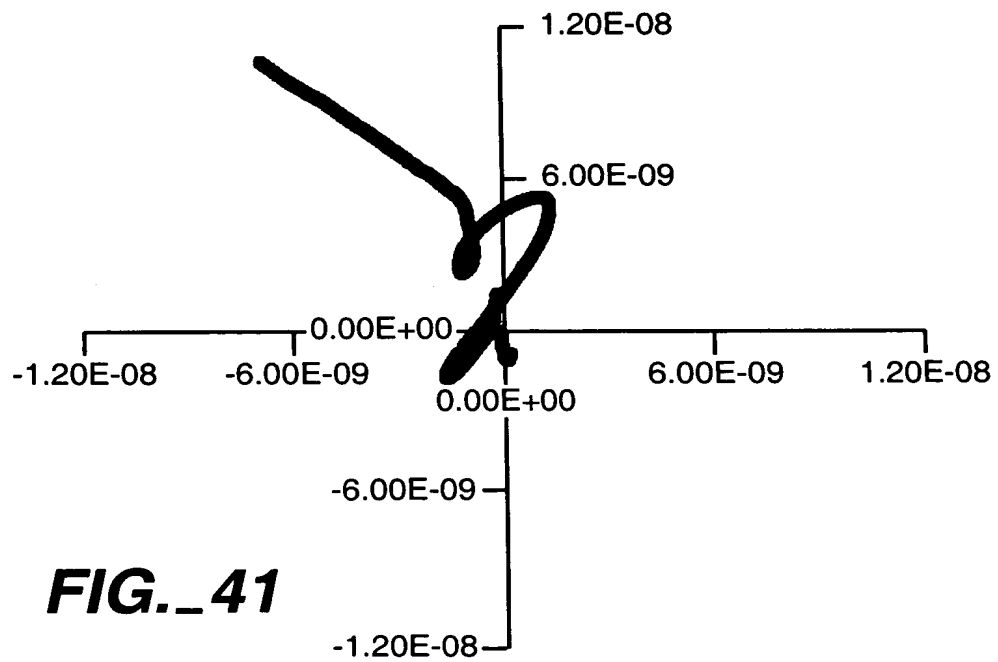
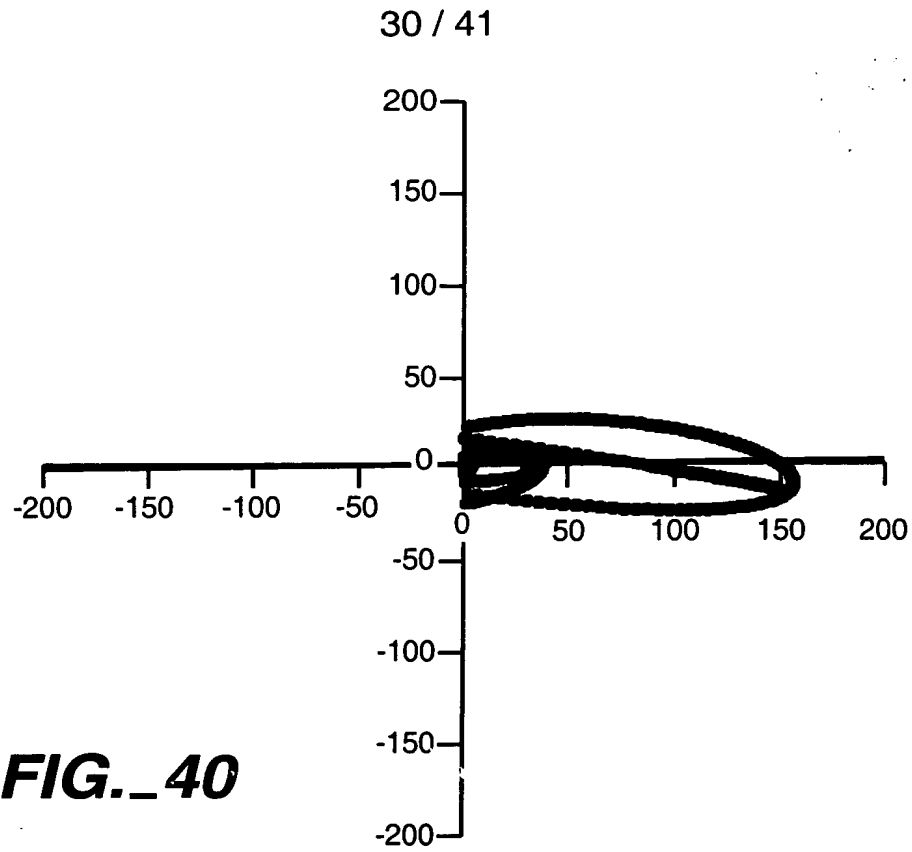
FIG._33**FIG._34****FIG._35**

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**FIG._36****FIG._37**

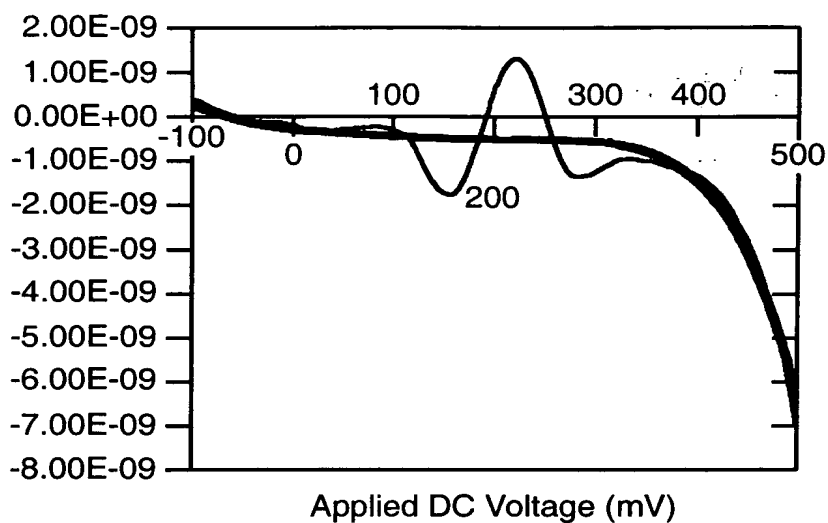
29 / 41

**FIG. 38****FIG. 39**

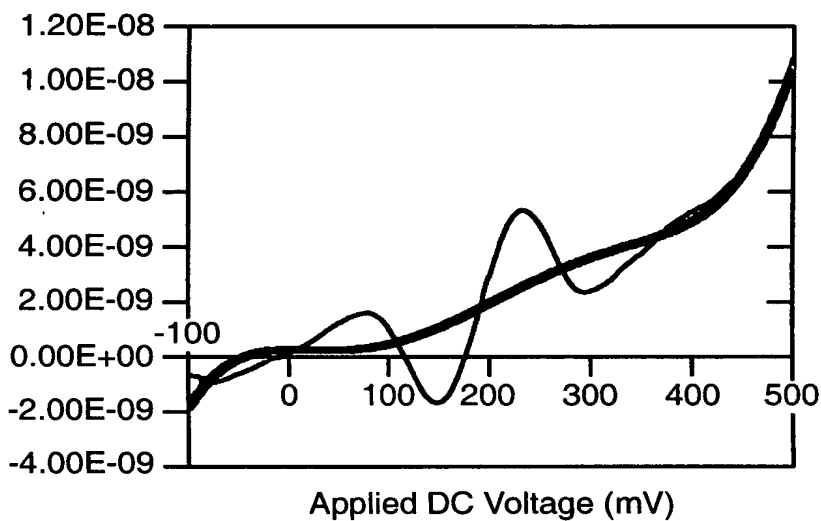


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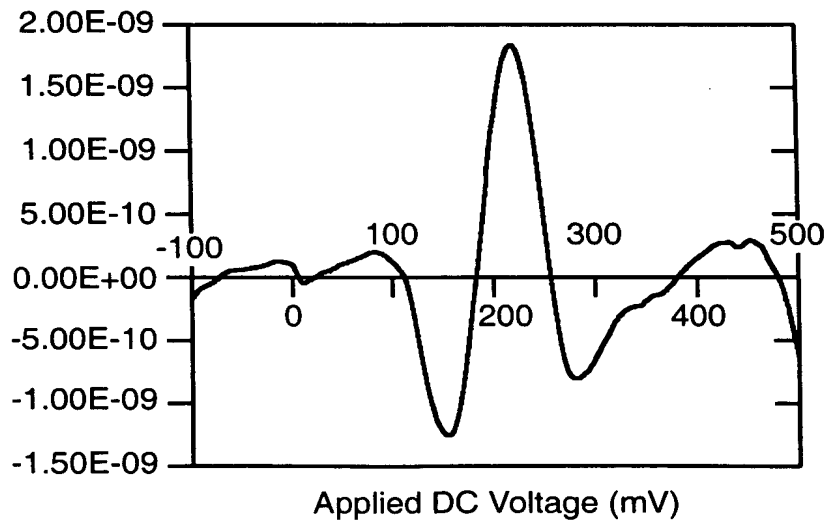
Scan Viewed
Along
0 Degrees

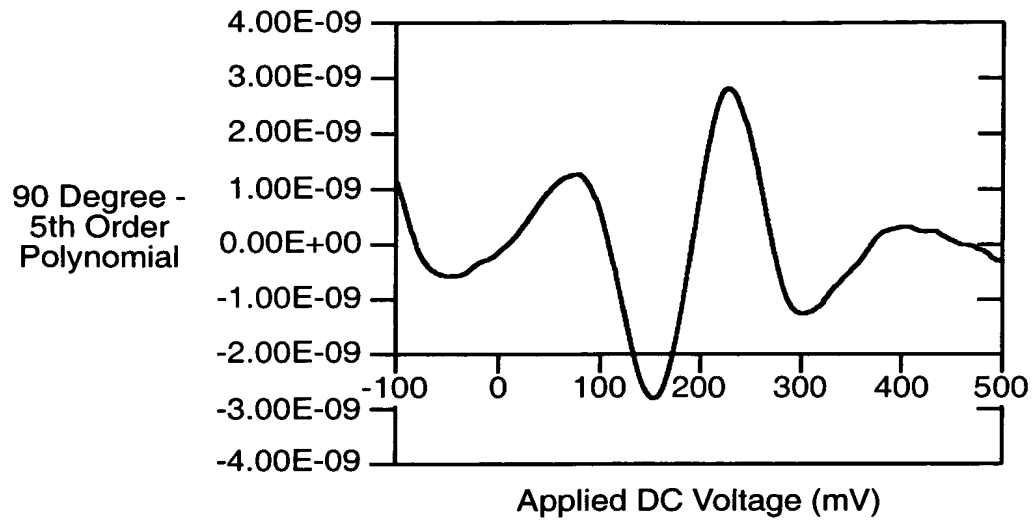
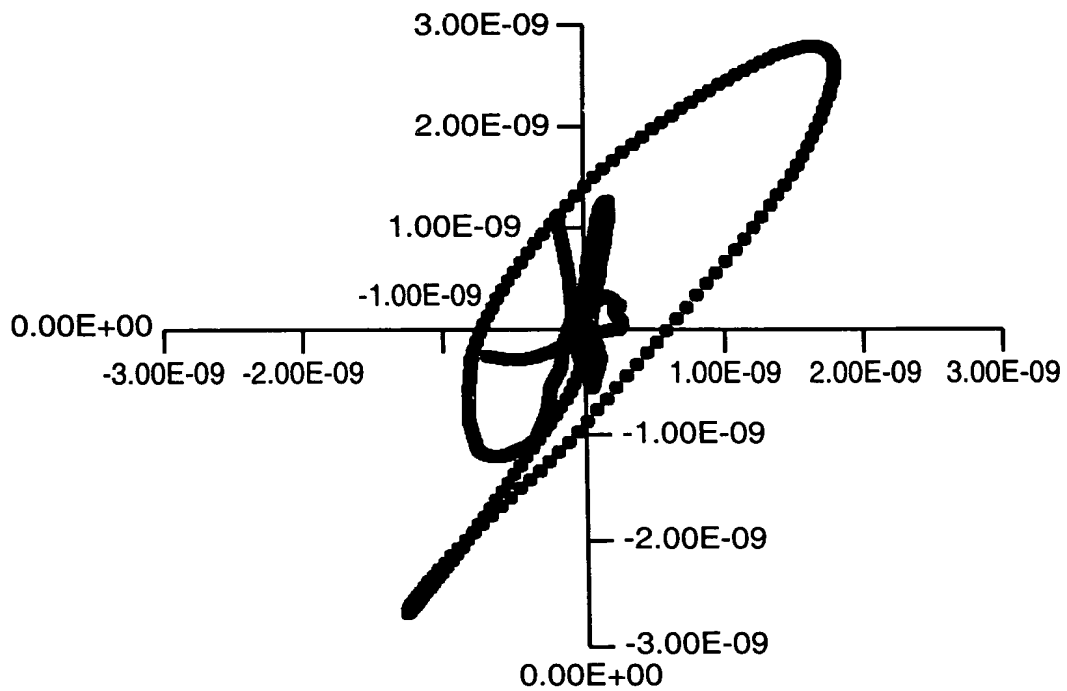
FIG._42

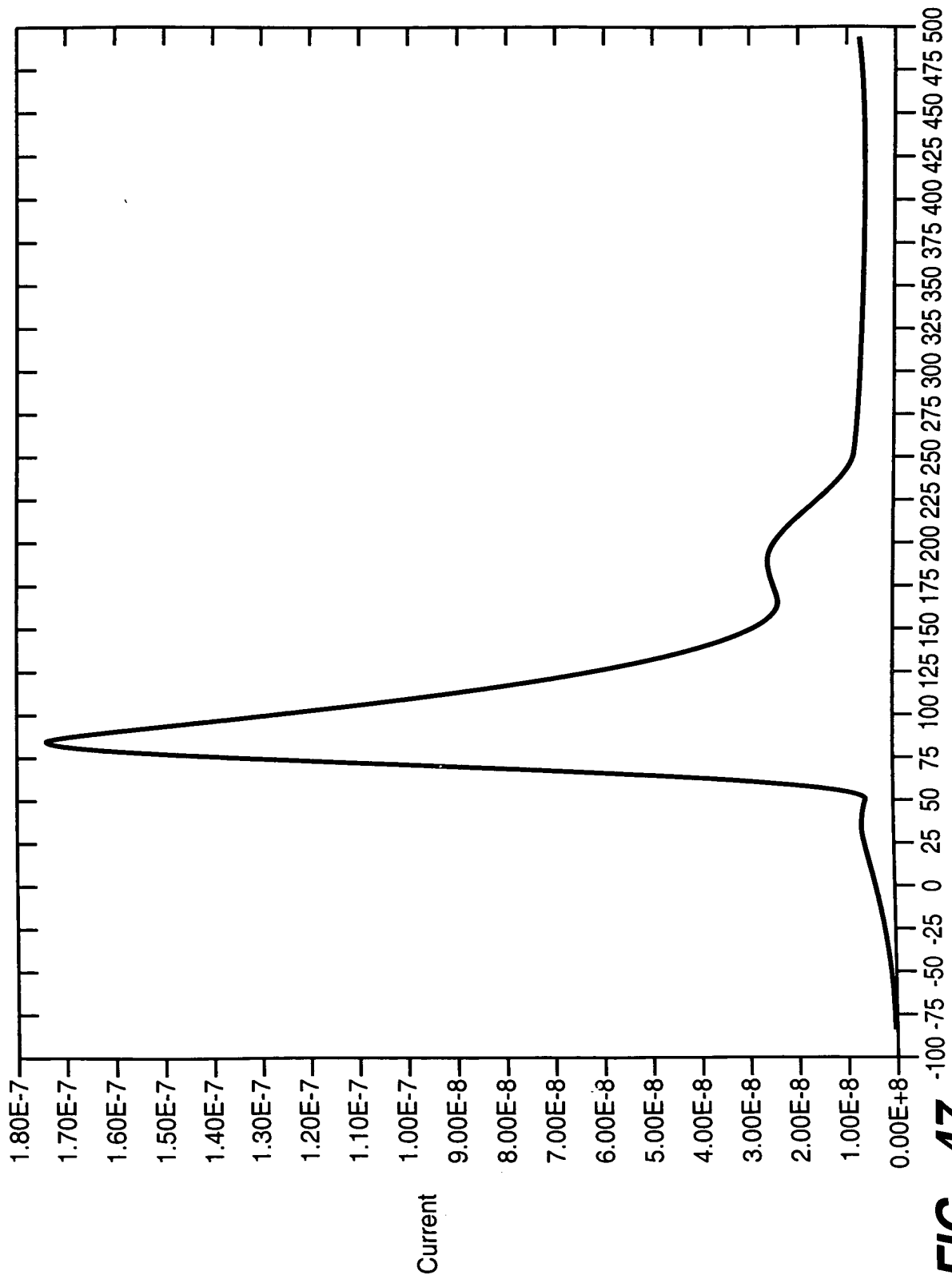
Scan Viewed
Along
0 Degrees

FIG._43

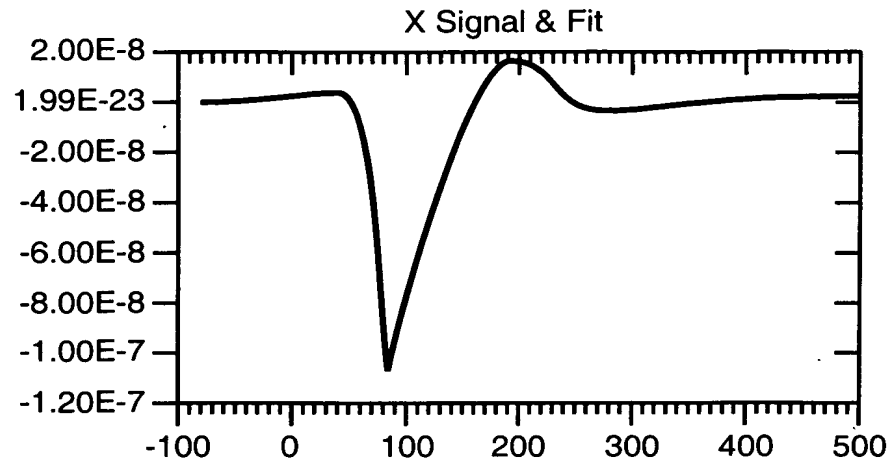
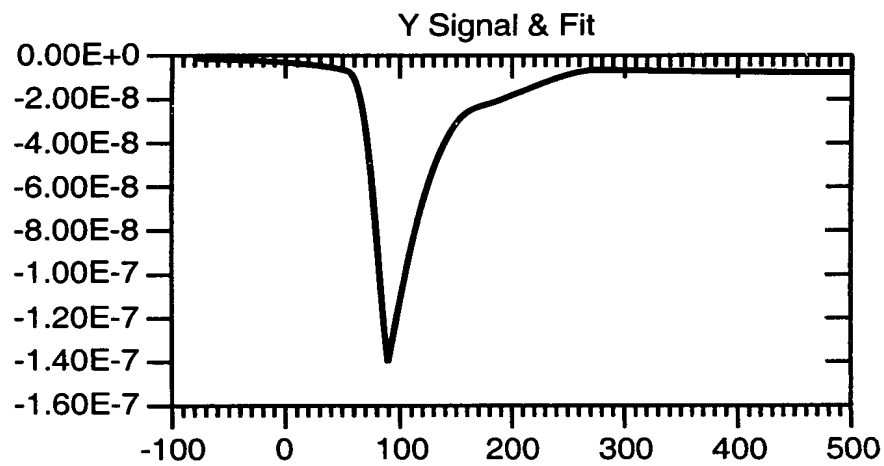
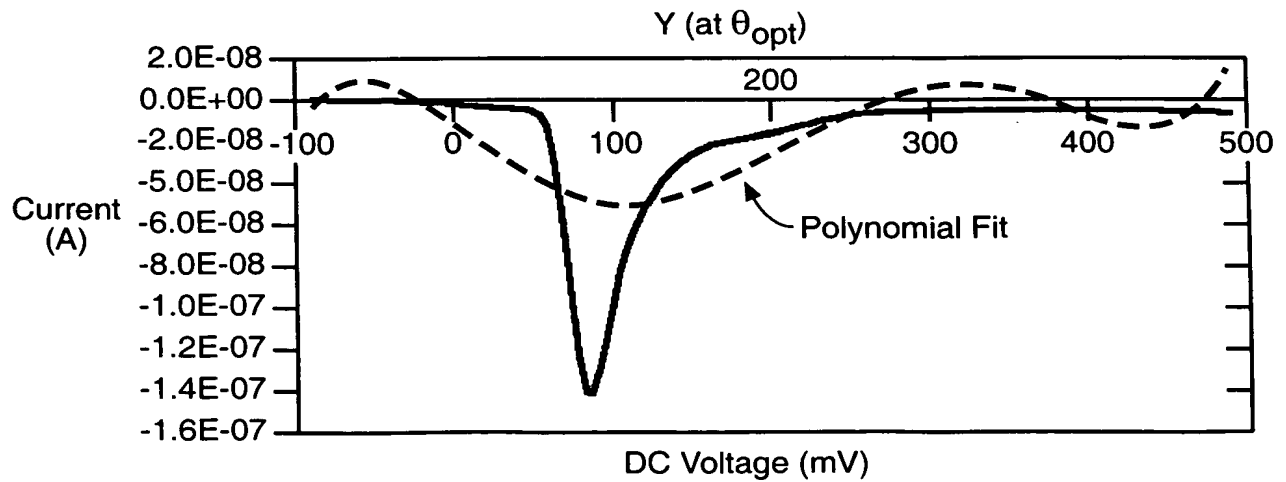
0 Deg. -
5th Order
Polynomial

FIG._44

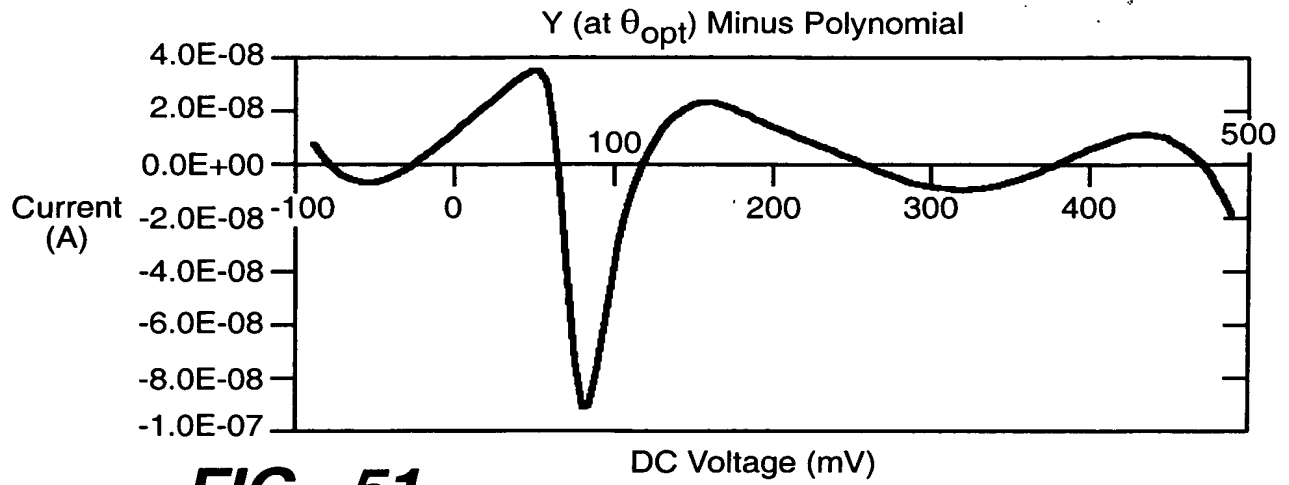
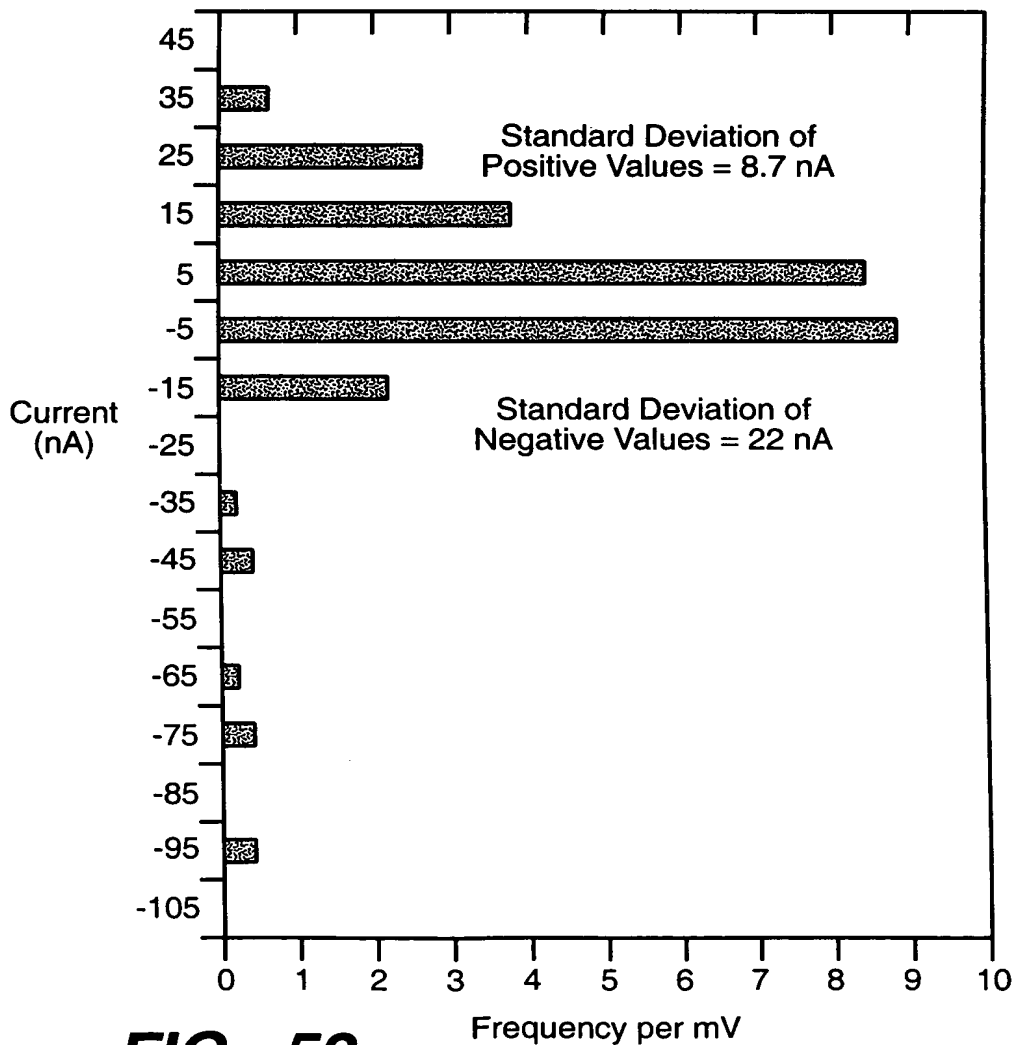
**FIG._45****FIG._46**

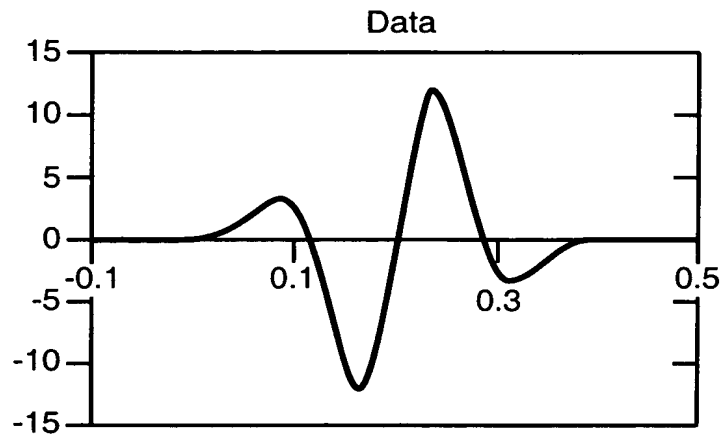
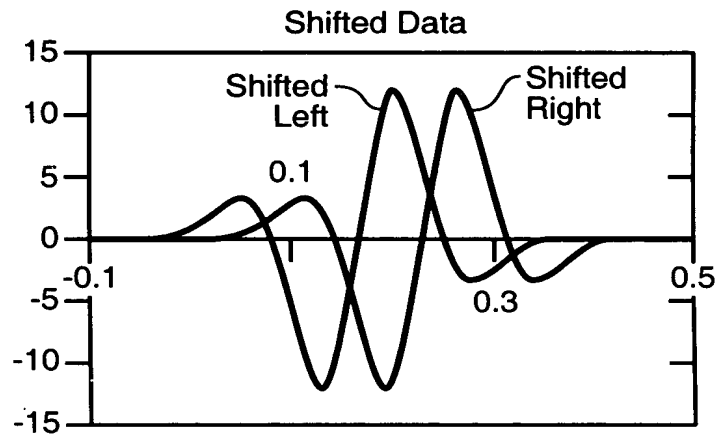
**FIG..47**

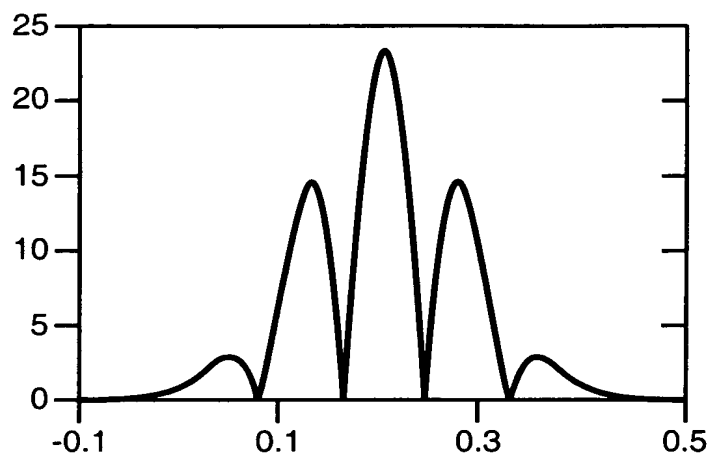
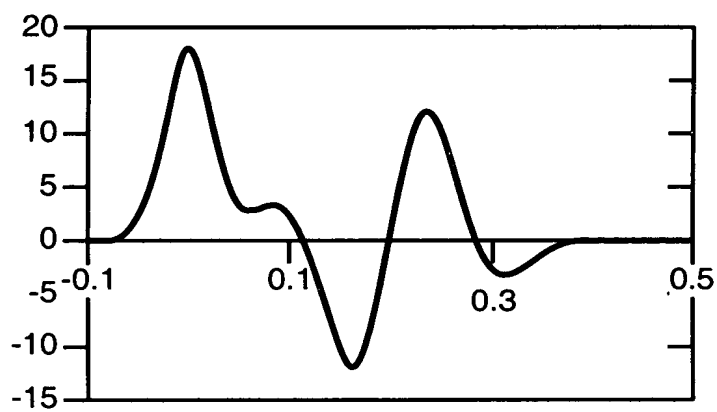
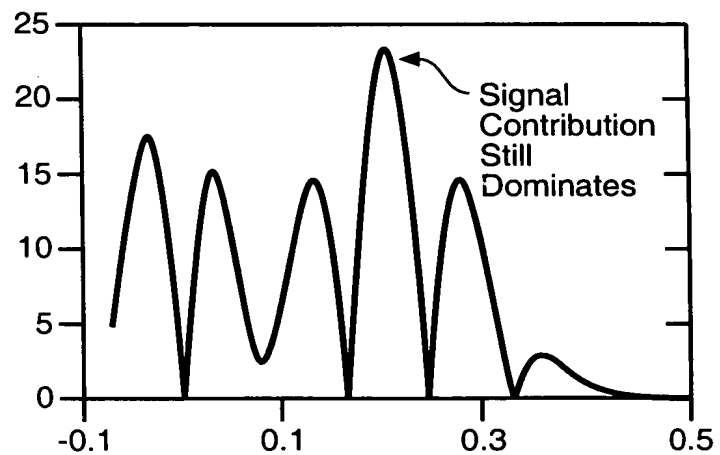
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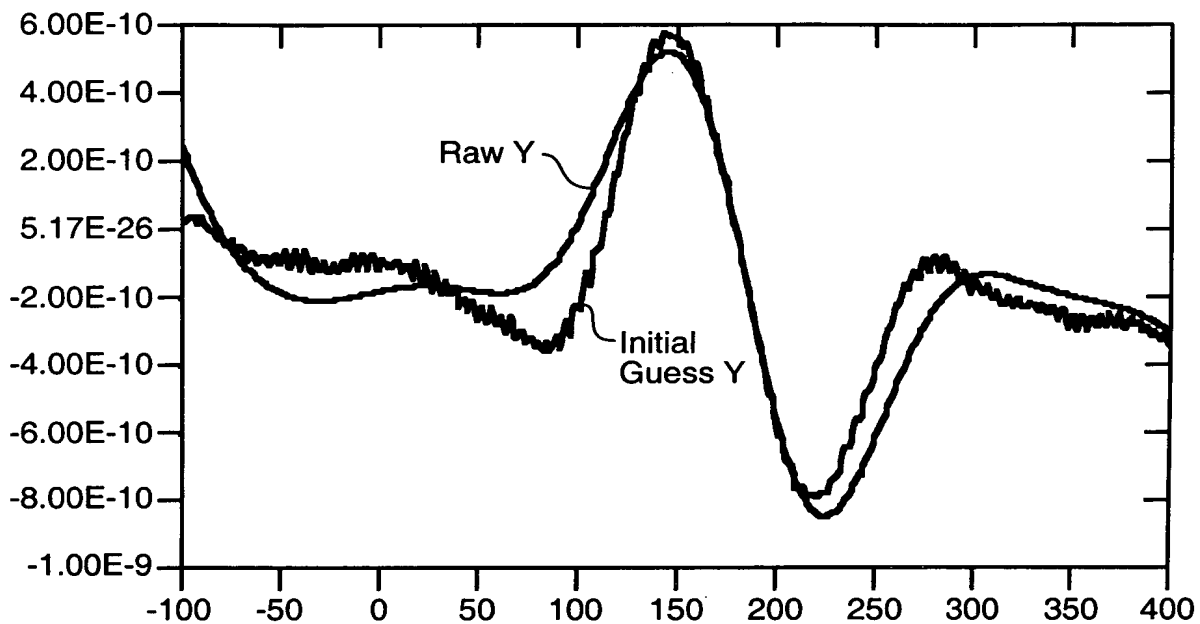
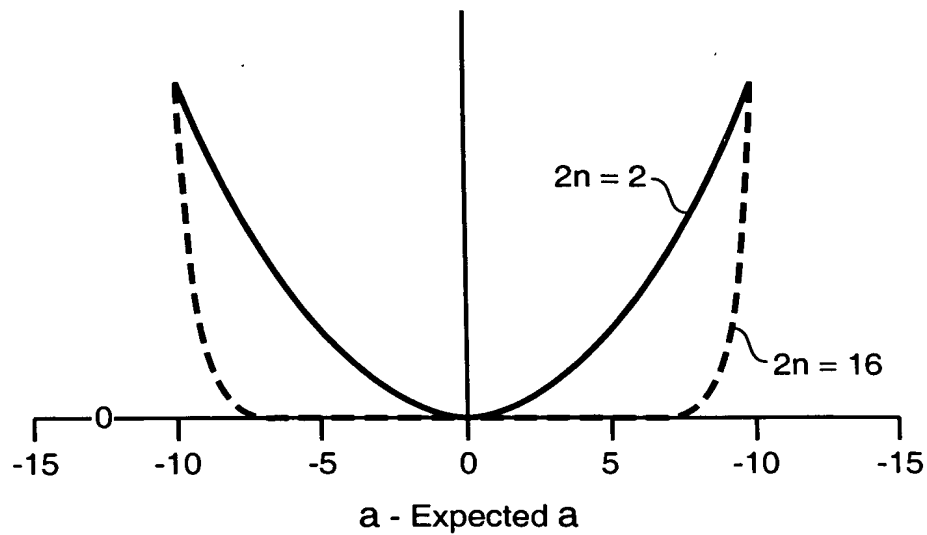
**FIG._48****FIG._49****FIG._50**

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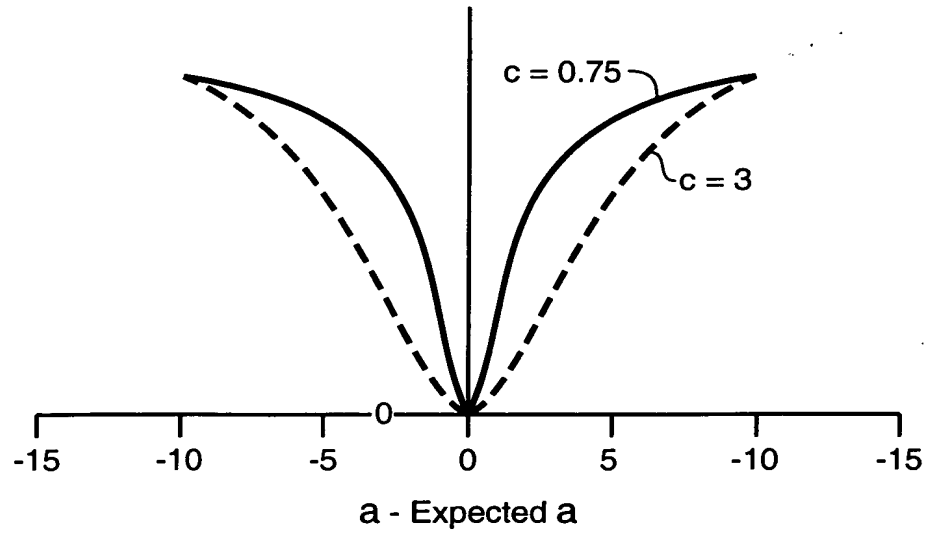
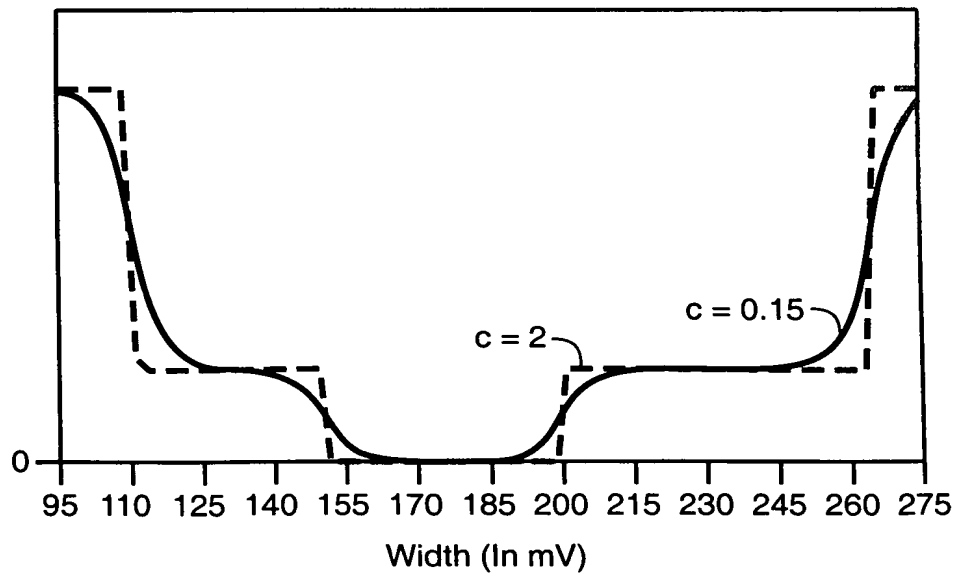
**FIG._51****FIG._52**

**FIG. 53****FIG. 54**

**FIG._55****FIG._56****FIG._57**

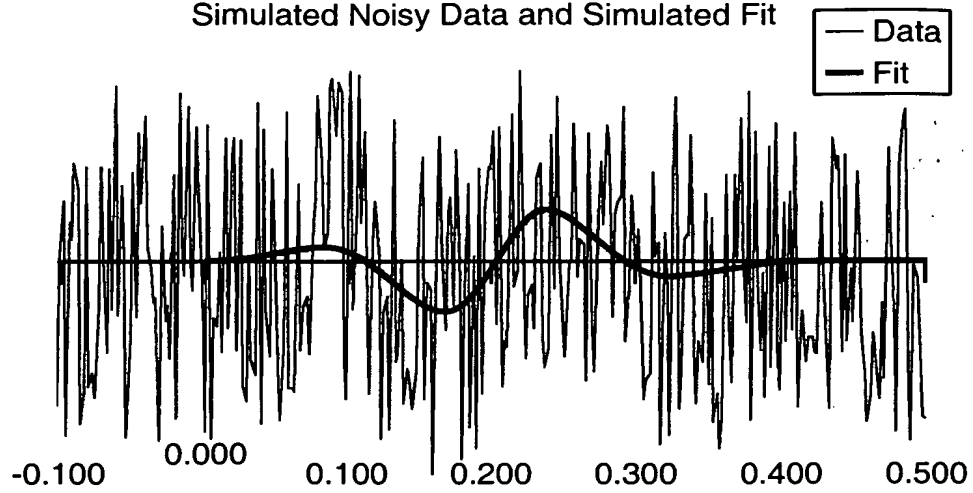
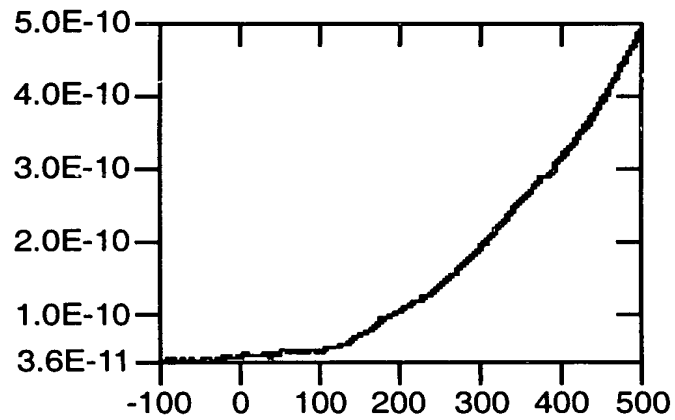
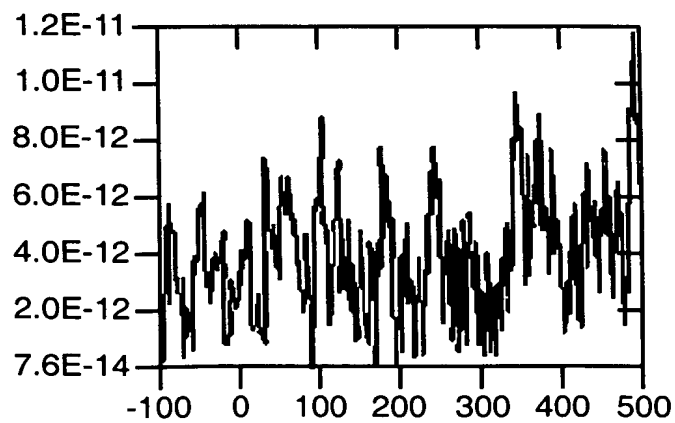
**FIG._58****FIG._59**

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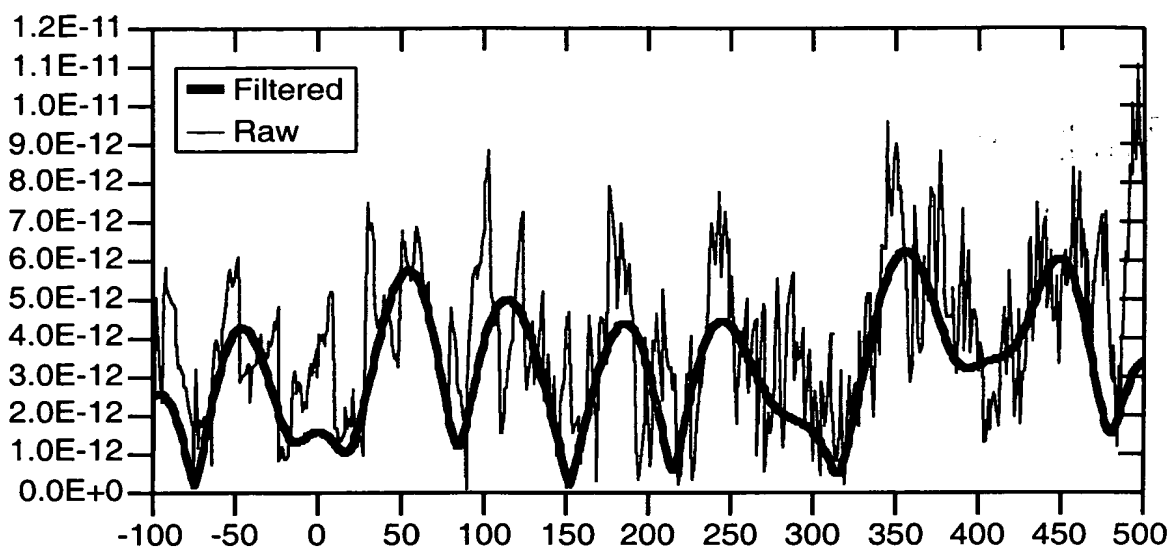
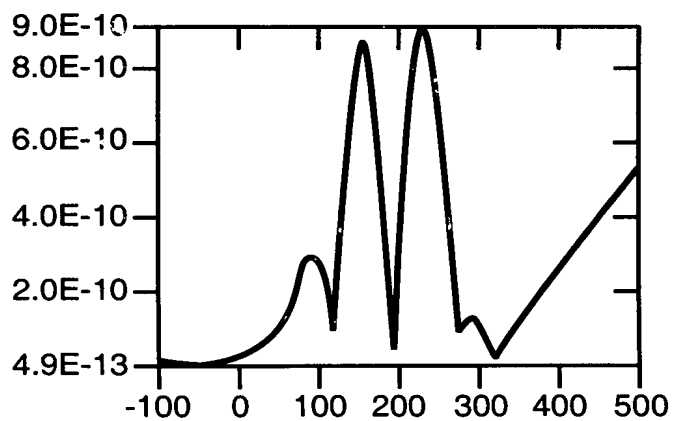
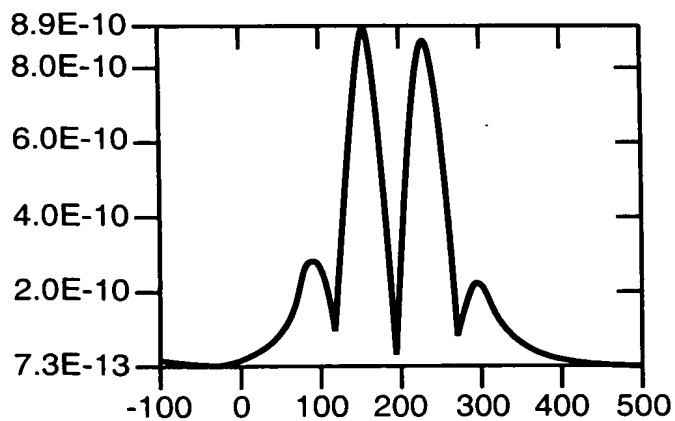
**FIG._60****FIG._61**

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Simulated Noisy Data and Simulated Fit

**FIG._62****FIG._63****FIG._64**

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**FIG._65****FIG._66****FIG._67**